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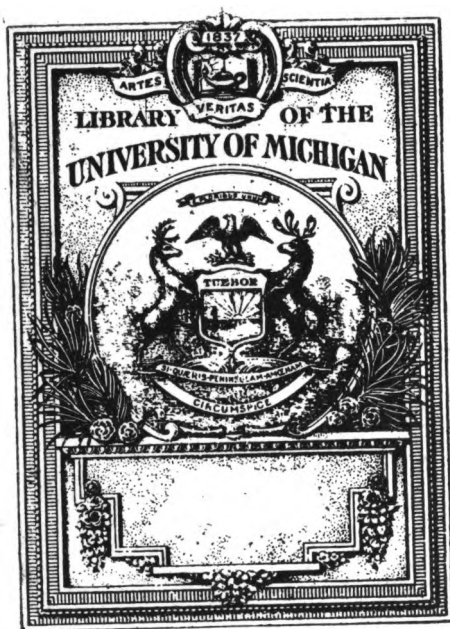
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PLATE I. M. H. Walsh's Rose, **EXCELSA**. Awarded Silver Medal 1915
by the American Rose Society

(Reprinted by permission of The Macmillan Company, New York, from "My Growing Garden," by J. Horace McFarland, published 1915.)

THE AMERICAN ROSE ANNUAL

*THE 1916 YEAR-BOOK OF
ROSE PROGRESS*

EDITED FOR THE AMERICAN
ROSE SOCIETY, BY

J. HORACE MCFARLAND



1916
AMERICAN ROSE SOCIETY

EDITOR'S OFFICE
HARRISBURG, PA.

THE American Rose Annual is supplied to all members of the American Rose Society. Additional copies to members, 50 cents each, postpaid. Others may obtain the Annual by remitting \$1 for Associate Membership to
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By J. HORACE MCFARLAND, Editor

*The 1917 American Rose Annual will be issued
February 15, 1917. J. Horace McFarland, Editor.
O. P. Beckley, Advertising Manager, Harrisburg, Pa.*

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THE ROSE

CERTAIN plants, as certain animals, have followed man from the first, supplying his necessities and administering to his comforts. How soon they made their appeal to him for beauty of form and color, we do not know; but plants prized for their flowers are amongst the heritages of the race. The form and color and fragrance of the rose are parts in this history of mankind. Rose forms, rose odors, rose colors are common relationships in the language, showing how close must have been the early association. With this history and influence as a foundation, we now breed and produce roses for a purpose, and we desire to extend their suggestion to every soul.

A handwritten signature in cursive script, reading "R. H. Bailey". The signature is written in dark ink and is positioned below the main text block.

THE AMERICAN ROSE SOCIETY

ORGANIZED MARCH 13, 1899

*"To increase the general interest in the cultivation and improve
the standard of excellence of the Rose for all people"*

OFFICERS, 1915

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Life Members (\$50) and Active Members (\$3 annually) receive all publications, tickets to all exhibitions, and are entitled to vote at all meetings.

Associate Members (\$1 annually) receive all publications, including this Annual, and tickets to all exhibitions.

Remit, with full address, to Benjamin Hammond, Secretary, Beacon, N. Y.

EDITOR'S PREFACE

THIS, the first American Rose Annual, is sent forth in three-fold hope: that it may serve to deepen interest in the rose in America; that it may aid in joining rose workers to The American Rose Society; and that it may bring to the Editor aid in making future issues much more helpful and adequate.

In planning the contents of this Annual, there have been kept in mind certain ideals. It has seemed to the Editor that mere directions for planting are care, such as are available in many excellent rose catalogues, were of less importance than a survey of rose progress in America. Therefore, readers will note the scope of the Annual as including not only articles relating to present practice in the selection of varieties and in adaptations of the rose to extended uses—as in the landscape, for example—but consideration of the opportunities open to hybridizers, of the great advantages of local rose organizations, of the success of municipal rose-gardens, and of the work of the energizing central body, The American Rose Society.

The articles making up the section devoted to the enemies of the rose illustrate the general ideal. Both are definite, frank, and forward-looking. The extended presentation under the heading of "Getting Better Roses" is designed to stimulate the production of roses in America for America.

If the rose is of those plants ministering to man's necessities and comfort, as suggested in the introduction by Dr. Bailey, then the desire of The American Rose Society for many more test and municipal rose-gardens is entirely justified, and the rather complete survey of roses blooming in the public view in test-gardens and elsewhere, from Ontario to Florida, from California to Connecticut, may serve to stimulate the beginning of beneficent local public rose-providing efforts. Certainly Mr. Parker's showing of the intensity of the use of park areas due to the blooming of a rose-garden in Hartford is encouraging in that direction.

The mere beginning of an accurate list of roses appears in the partial presentation of varieties "made in America," and

this feature, it is hoped, will in future issues be usefully expanded, eventually leading to the separate issue by The American Rose Society of an official catalogue of roses.

The Editor acknowledges with gratitude the cheerful response made by busy men to his requests for the material which makes this Annual possible. This response is pleasing evidence of the growth of a rose democracy and a rose fraternity amongst us.

The present activities of The American Rose Society are briefly chronicled. The men who have kept that Society alive and growing, and the officials of it who have so loyally supported the efforts of the Editor to make this Annual worth while, now have opportunity, it is believed, to see come about a great rose awakening in America. To the Society itself many members should be added, and with it may well affiliate, under the supporting terms already arranged, scores of local organizations of the nature of those that are doing good work in Syracuse, and similar to the live organizations in Ontario.

In fairness alike to the readers of the Annual and to the horticultural tradesmen who have shown their faith, reference is here made to the "white list," made up of all the advertisers whose announcements appear in this book. Especial effort has been made to include all the needs of the rose-grower in this advertising view, and the reader may buy with confidence of any of these reliable business men. Only advertising useful to rose-growers, and from firms of high standing, is admitted to the Annual.

This Annual has been compiled at considerable effort, wholly as a labor of rose regard by the Editor. It may be taken as a sort of forecast of the better Annuals to follow, which will be made possible by the friends of the rose who hereafter think it worth while to help in the common interest. To such he confidently appeals for suggestions, information, criticisms, experiences, addressed to him at any time.

J. HORACE McFARLAND

*Harrisburg, Pa.,
February 15, 1916*

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PLATE II. MR. S. S. PENNOCK
President, American Rose Society

THE AMERICAN ROSE ANNUAL

The American Rose Society—Its Aims and Purposes

By S. S. PENNOCK, President

THIS Society was organized in New York under auspicious circumstances in March, 1899, with the object of increasing public interest in the Queen of Flowers. From the by-laws then adopted are presented the purposes of the organization:

1. To increase the general interest in the cultivation and improve the standard of excellence of the rose for all the people.
2. To foster, stimulate and increase the production in every possible way of improved varieties of the rose, suitable to our American climate and requirements.
3. To organize a system of exhibitions at such times and places as this Society may, from time to time, decide on; to offer prizes of money, of gold, silver, and bronze medals, and certificates of merit, for meritorious new varieties of roses; also to offer prizes of money, cups, etc., for excellence of exhibits made at shows held by the Society.

It is also proposed that the Society disseminate to its members the latest information pertaining to the rose, recommending new varieties of undoubted merit, best methods of culture, how to fight insect and fungoid pests, the proper use of manures, and other information from the pens of leading experts that, especially to amateurs, will be worth many times the cost of membership.

Since then the Society has grown and prospered, until today it includes in its membership most of the leaders in rose-growing, both in a professional and an amateur way.

To help each member, whether professional or amateur, is the aim of the Society. We desire to disseminate useful literature, and in every way to promote rose-growing, either under glass or in the open. We seek to provide rose information from the pens of the best writers in the country—information that will cover every phase of the subject.

We cherish the hope that eventually we can give our members help of at least as much real value as that supplied in England by the National Rose Society, which sends out literature that is invaluable to its members. With this object in

view, we have this year undertaken to publish the annual Bulletin with a much broader scope than heretofore, and, of course, at more cost. It is planned to make it a reference book of value, as well as to present interesting rose reading; to have it, in truth, The American Rose Annual.

At a meeting of the Executive Committee of the American Rose Society held in Philadelphia during the summer of 1915, this matter of improving our publications was discussed with Mr. J. Horace McFarland, of Harrisburg, Pa., who kindly consented to help us, in agreeing for three years to act without compensation as editor of this Annual. In thus placing the matter in his hands, we have had the satisfaction of believing that he would carry the work through with ability, giving the commercial and amateur lovers of roses a book of interest.

This first American Rose Annual, succeeding the Annual Bulletins which have been so capably handled by our indefatigable Secretary, Mr. Benjamin Hammond, is therefore offered as an evidence of the intentions of The American Rose Society.

For a number of years the Society has worked principally on commercial lines, and as such it has probably heretofore appealed more strongly to the commercial man than to the amateur. The commercial rose industry of this country is a large industry, and it serves to set most exacting standards of rose attainment. Yet the amateur has not been lost sight of. He is a more important factor of rose progress each year. Not only does he benefit and inspire the commercial man, but he is popularizing the rose as no other means can or will.

It is to the amateur I feel we must look, as the years go by, to increase the love for and the knowledge of roses. He will spur on the commercial grower to bring his productions nearer perfection. The amateur grower is certain to influence the cut-flower grower to try more varieties, and to try in the greenhouse those varieties that are doing well in the garden. There are probably many garden varieties of roses in existence today which could be to advantage forced under glass, if brought to the attention of the commercial grower.

Commercially, there are too few varieties being forced. The more varieties we have, the more opportunity there is of placing them before the public. How many books would be sold if

there were but four or five titles available? So it is with roses—the fewer varieties, the fewer sales. People get tired of one thing; they want variety; they call for something new. So to the commercial man I propose that he broaden out in work with the amateur to increase the number of good roses grown and forced; and the selling field will correspondingly expand.

The amateur's work, to my mind, is far more fascinating than is the commercial end. My experience as an amateur in garden roses is very small, but it has been a source of great pleasure and recreation to me. Looking around among my friends, both amateurs and professionals, I can see the interest in garden roses growing. The commercial rosarian is now realizing that the garden rose is and will be a tremendous factor in the future of the rose in America.

The American Rose Society, in establishing test-gardens in various parts of the United States is working out a feature that will become a most valuable and far-reaching asset to rose-growing. These test-gardens are now firmly established in Washington, in Hartford, at Cornell University (Ithaca, N. Y.), and in Minneapolis.

A committee has been appointed to look after and take charge of each garden. The plan is to establish in these test-gardens at least five plants of a kind, in the case of Teas, and two of a kind, in the case of Climbers, of every known variety that can be obtained, not only from this country, but from foreign countries as well. Accurate records are to be kept as to how they flourish, the climatic conditions, the amount of bloom, and whatever statistics as to temperature, soil, etc., are deemed necessary by the committees in charge.

Anyone contemplating the growing of a certain variety—for instance, in the same climate as Washington—might refer to the appropriate test-garden reports, and see how that variety had behaved—whether it was hardy, whether it was able to stand the hot summer, and so on. These records, as summarized each year in this Annual, will become invaluable.

It has been my pleasure to go over three of the four test-gardens already established, thus enjoying some of the most pleasant days of my experience, and learning more about roses than one would be able to pick up in a month of ordinary

inspection. I believe I am safe in saying that everyone who visits these test-gardens feels that the time has been well spent.

Probably we owe more to our ex-President, Mr. Wallace R. Pierson, for pushing these test-gardens, than to any other one individual. In encouraging this work Mr. Pierson has been farsighted, and has realized what the gardens will mean both to the commercial man and to the amateur.

Any society or horticultural organization in the United States or Canada which holds an annual exhibition of roses can affiliate with the American Rose Society, and upon affiliation under our rules will receive annually one silver and two bronze medals, to be offered at their exhibitions. Further, each affiliated society will receive *The American Rose Annual* for each one of its members.

These annual shows, as held by the various societies over the country—not only by present affiliated societies, but by those we hope to have affiliated with us in the future—are to my mind likely to prove the greatest advertisers for the rose that we can have. So far as I know, wherever a show has once been held, it is continued year after year, each being larger and better, with more interest taken.

At a little show held annually at Lansdowne, Pa., last June an old Quaker friend of the writer came to him, and after looking the exhibition over, being very much interested in the flowers—not only the roses, but the other flowers as well—said: “I think *that* kind of work is good for the community; for when the people are busy with flowers, they are out of mischief.” We certainly elevate the standards of our communities when we succeed in creating a love for roses; for if a man really loves the rose, he will surely love his neighbors!

It is surprising to note how many amateurs who attend these small shows possess much general information on roses—in fact, far more than the average commercial grower, who knows his own varieties very well, but whose knowledge outside of what he is growing may be limited.

A rose show, whether it is an amateur show, or whether it is one of the large shows fostered by the Society of American Florists, is an education to everyone who attends.

In each succeeding *Rose Annual* we hope to have set forth

some of the history of the rose, by the leading rosarians of the country; history that will be interesting in more ways than one; including the experience of both the commercial and the amateur grower. It is gratifying to know that this first American Rose Annual presents thus some papers of permanent value—as, for instance, Mr. Wilson's account of the species, Dr. Van Fleet's interesting suggestions as to hybridizing, and the story of "Gurney" Hill's rose half-century.

At a meeting of the American Rose Society held in Boston, August 20, 1914, when Mr. M. H. Walsh was presented with the Hubbard gold medal, this same Mr. Hill, in making the presentation, said among other things:

"Now another thought. I hope some day that this medal will go to a man who will take up our native species and from some of our best and hardiest Hybrid Teas produce roses which shall be free from what we call black spot, and which will flourish in our American gardens. I believe that that can be accomplished. I believe some day it will be done. But, let me tell you, someone will have to do it who is disinterested, who is not always looking at the dollar at the end of the accomplishment; for up to this date there has been but very little money to any man who has raised a rose for the embellishment of our gardens."

There are a number of enthusiastic breeders of roses working toward these ends, and we hope to have in the next few years some very good results; results that will revolutionize the garden-planting of roses. In addition to those who are thus working, we have a number of commercial men making rose history.

The American Rose Society is organized to serve as a clearing-house for rose workers. In its ranks will be found those interested in new varieties, in protecting roses from insects and diseases, in knowledge of soils, fertilizing, pruning, planting, and cultivating. It is because of these various advantages which the American Rose Society now has to offer that we appeal to each member to help rose progress through it, by increasing its membership, by adding to its literature, by promoting shows and interchange, and by working for rose prosperity. We may thus have a Rose Society that will be better, larger and more far-reaching, and of which it will be a real honor to be a member.

Roses in the Landscape

By CHARLES DOWNING LAY, F.A.S.L.A.

Editor "Landscape Architecture"

EDITOR'S NOTE.—It has been assumed that the rose outdoors is a garden plant only, and in catalogues or books treating of landscape effect it is usual to find the statement that the rose is not useful in the shrubbery or the border. As a landscape architect in active practice, and treating the rose wholly on its merits, Mr. Lay here shows an unsuspected value for it. It may not be amiss to say that certain of the newer climbers with persistent foliage form splendid objects in the border with but a little training, while the rugosas have also a definite shrub value when properly placed.

WHEN I tell people that I propose to plant roses near the house or along the drives it is often hard to make them see what I mean, for roses are to most people objects for personal adornment or for table embellishment.

The Hybrid Perpetuals, Teas, and other garden types, are indeed of little value or interest except in the house; for if the flowers are left outdoors they open too fast and too far, and soon wilt and fade in the sun. The growth, too, is either puny and thin, or tall and spindling, and the foliage has little beauty. They have been so bred for flowers that their appearance as a whole has suffered.

It is different, however, with the common roses of the thickets, which have mostly been neglected by the rosarian and the hybridizer, and which retain the simple delicacy of single flowers together with the rugged constitution which means thrifty growth and pleasing foliage. These common wild roses may be used with other shrubs in any thicket, or they may be planted in masses, each variety by itself, or several varieties may be associated in a plantation. They fruit abundantly, and the haws are of considerable beauty and interest in the winter landscape. This is a matter of great importance, for the shrubbery in winter should be as beautiful, though less showy than in summer. Indeed, I often think our native shrubs are more beautiful in winter, when the brilliant luxuriance of full foliage has given place to the more subtle hues of the bare branches. These bare branches are full of delicate misty colors when seen

in mass, and in the rose they have a wide range, from pale green to rusty greens, bronzy reds, and quiet crimson.

The roses show remarkable variation in height and in habit of growth, so that they can be used in many different situations. They are easy to suit as to soil, and can be grown along meadow streams, on rocky hillsides, or on the sandy beach, often appearing voluntarily where few other plants will live.

Their use in the landscape is important, for the native varieties are characteristic of much of our eastern scenery, and when planted in quantities they give that appearance of natural wildness which is more and more coming to be the ideal in parks and country places.

The wild roses, as they must continue to be called to distinguish them from the hybrids, are found in New England pastures associated with bayberry, red cedar, elder, arrow-wood and other shrubs of the fields. Along the coast they are commonly found in such desert places as support the beach plum, bayberry, goldenrod and beach-grass. They gain from association with these wild neighbors. They are especially useful for holding steep and rocky banks, since their stolons grow in every direction and form a perfect mass of shoots and roots which hold leaves and soil.

I doubt if any shrub makes as good a cover for birds, winter or summer. They are difficult for cats to penetrate, and a thicket of *Rosa multiflora* and *R. setigera* is impassable for man or boy. The rose thicket needs no care when well started, except to cut out seedling trees which may appear. In fact, they are so thorny that care of the ordinary sort is impossible, and even the most Teutonic gardeners will cease in disgust their efforts to mutilate a rose shrubbery.

The wild roses cannot be tamed; they will never make good specimens for the lawn, and planted with such sophisticated things as *Hydrangea paniculata grandiflora* they will either succumb or smother the hydrangea. Viburnum, barberry, sumac, witch-hazel, hazelnut and other shrubs of the fields they will endure and live peaceably with, and sometimes a specimen or two of forsythia among them is not amiss.

Along the coast, whether rocky or sandy, *Rosa lucida* is probably the best. Under these hard conditions it may be only

a few inches high, but it will bloom, hold the falling leaves and the drifting sand, and gradually by its mere presence ameliorate the conditions. On the rocks also it may be dwarfed, but it will still bloom and prevent washing of soil.

In wet meadows, *Rosa carolina* will probably be best, growing tall and strong, and showing its head above the spirea, the blackberry and the button bush. The plants can be used in any naturalesque landscape, even close to the house or the terrace walls, if the intention be to bring the naturalesque landscape to the boundaries of the kept grounds, thus making it appear that a site naturally adapted for the house was utilized.

Their season of bloom stretches over a long period, and if native and foreign roses are used together the plantation will have color in spots for six weeks or so. This mixture of varieties has great advantages for the roses, for they seem to help each other, the good foliage of one hiding the thinness of its neighbor's dress. Such a combination of varieties prevents overdoing the rose color which in too large masses is always tiresome in the landscape.

There are fifty varieties of roses described in the 1900 edition of Bailey's "Cyclopedia of American Horticulture," some of them probably being of little value. Among the most useful for general landscape planting are the following:

Rosa blanda. Height 2 to 4 feet. The earliest to bloom of the native species, and the handsomest in winter. The branches are smooth, shiny and deep red.

Rosa carolina. Height 1 to 8 feet. Prefers swampy and wet ground.

Rosa cinnamomea. Height 3 to 4 feet. The common Cinnamon rose of old gardens. Like the lilac, it outlasts many houses, and is frequently found around old cellars growing in the grass. The flower is small, semi-double, pink, fragrant. It increases by stolons and can be used with our native wild roses or with other shrubs.

Rosa damascena. Height 3 to 4 feet. The old Damask rose. It is rather pleasing with other roses or in the shrubbery where its foliage is not much seen. Rather large, double, fragrant flower.

Rosa humilis. Height 3 to 6 feet. The common wild rose of the interior, and the least interesting of the native roses.

Rosa lucida. Height 4 feet. The common rose of the northeastern coast. Pale pink flowers; thick, lustrous leaves, reddish stems and plentiful spines.

Rosa lucida alba. Height 4 feet. White-flowered form of the above; has greenish branches.

Rosa multiflora. Height 15 feet. Forms a roundish dense shrub when grown alone. It will climb on trees or other shrubs. It has clusters of small



PLATE III. *ROSA SPINOSISSIMA* var. *ALTAICA*.—To illustrate the use of wild roses in landscape planting. (See page 18.)

white flowers with yellow stamens, a delicious spicy fragrance, and small red or orange fruits. It is very spiny, and makes an impenetrable thicket.

Rosa nitida. Height 2 feet. Called our most beautiful native rose. Short stems, covered with bright red prickles. Always dwarf. The flowers are darker than the other natives. Useful for steep banks, or in the front of a bed of other roses.

Rosa rubiginosa. The Sweetbrier. This should be planted singly, with other tall roses such as multiflora or setigera, as its foliage is not very good although the variety is indispensable because of the fragrance of the new shoots.

(The Lord Penzance Hybrids of the Sweetbrier are charming plants with exquisite salmon, pink and coppery single blossoms. These, too, should be planted sparingly in every rose thicket.)

Rosa rubrifolia (*R. ferruginea*). Height 6 to 7 feet. Is useful because of the reddish tinge of its foliage. It is not a strong grower, and should be planted with other roses. The flowers are small, with a delicate sort of beauty and an unusual pink color. The haws are good.

Rosa rugosa. Height 6 feet. A trifle exotic in appearance because of its rough, dark green, shiny foliage. Stems are thickly covered with gray prickles. Flowers large, single, in some seedlings an ugly shade of rose, followed by large orange or red haws. The hybrids of this rose are better in flower and foliage and look less exotic, particularly Mme. Georges Bruant and Arnoldiana.

Rosa setigera. The Prairie rose. Height 4 to 6 feet. Large single flowers in clusters, opening one at a time. Gracefully arching branches. The foliage is good, and turns dark bronzy red in the fall. It can be planted with other roses or in masses by itself back of lower roses, such as nitida or even Wichuraiana.

Rosa Wichuraiana. Trailing over the ground and growing shoots perhaps 10 to 12 feet long. This, unhappily called the "Memorial rose," has the flower and habit of a sublimated dewberry. Its green spiny stems with shiny leaves sprawl over the ground and are happier so than when on a support. The flowers are pure white with a large circle of yellow stamens and are followed by interesting fruit. It will grow over banks, over rocks, hang down on stone walls, and persists even in the grass. The hybrids of this rose are numerous and include many of upright growth, such as W. C. Egan and Lady Duncan, which can be planted singly among other roses, though it must not be forgotten that these roses, when in bloom, have as yet a somewhat strange look in wild places and are likely to give an over-dressed appearance, especially when used too generously (as they have been along a railroad embankment). Notable among these hybrids is Sargent, called one of the handsomest roses that has been raised in the United States. Jennie Dawson is probably the best white.

The wild rosarian, as he might be called, will be interested in trying some of the oriental roses recently established in the Arnold Arboretum. Some of these which promise to be most valuable because of their color (especially the whites) and habit are

Rosa caudata. From western China. Pink flowers 2 inches in diameter in large clusters; fruit orange-red, 1 inch long. Perfectly hardy.

Rosa Helenæ. Height 5 to 6 feet. Flowers white, $1\frac{1}{2}$ inches in diameter, in clusters; fragrant.

Rosa Hugonis. From western China. Clear yellow single flowers and neat pale foliage.*

Rosa Jackii. From Korea. Flowers white, 2 inches in diameter, in clusters; lustrous foliage.

Rosa multibracteata. Innumerable small pink solitary flowers. One of the last Chinese roses to bloom.

Rosa setipoda. Large vigorous shrub with broad, many-flowered clusters of dark pink flowers.

Rosa spinosissima var. *altaica*. Tall, wide bush. Numerous, large, single, white flowers, faintly tinged with yellow. (See illustration, facing page 17.)

It would be difficult to imagine a more lovely plantation than a long thicket of our native roses, bordering a road, for instance, beginning with *nitida* in front, then *blanda*, *lucida* and *lucida alba*; these in turn broken by masses of *multiflora* interspersed with *setigera*, *rubiginosa*, *rubrifolia*, etc. The whole to be backed up by other families of the rose order, such as the native hawthorns, plum, flowering cherries and flowering apples. This would not be without some bloom from the time of the earliest plum blossom to the last blow of the *setigera*, probably three months or more; and such a planting cannot be surpassed in delicacy of autumn and winter beauty.

*Referred to with much interest elsewhere in the Annual, particularly by Dr. Van Fleet and Mr. E. H. Wilson; illustrated on plate facing page 32.
—EDITOR.

The Editor will appreciate pictures or notes relating to the landscape use of roses, for aid in developing the subject in the 1917 Annual. Address him at Harrisburg, Pa.

The Best of the New Introductions for Outdoor Rose-Growing

By GEORGE C. THOMAS, JR.

Author of "The Practical Book of Outdoor Rose-Growing"*

EDITOR'S NOTE.—It should be noted that Mr. Thomas is devoting the most careful attention to the impartial testing of roses in his extensive private gardens near Philadelphia. His conclusions are impartial, and are, therefore, of especial value. No amateur in America is more earnest or painstaking in working with the rose.

IN giving a list of new roses of most promise, one should understand that new European varieties are shipped to America as such small plants that a two-years test is required. Sometimes these weak plants will not do well until the third year, and when they winter-kill, duplicates must be tested. For these reasons we cannot recommend the growing of new varieties by the average amateur.

During 1915 we have tested all new varieties issued in Europe by prominent growers. Owing to foreign conditions, some 1914 varieties did not reach us until April, 1915, making the tests less conclusive than usual. Roses of 1912-1913 have been thoroughly tested; data regarding them is conclusive.

The color descriptions which follow are, in most cases, the introducer's.

It will be realized that the following descriptions are for the roses as grown near Philadelphia.

Varieties Introduced in 1912

C. W. Cowan. (Alex. Dickson.) H.T. Good growth, hardy; good foliage, fine stem; medium size, good form, fair lasting qualities; color "warm carmine-cerise," tea-rose perfume; thirty blooms in 1915.

Freifrau Ida Von Schubert. (P. Lambert.) H.T. Good growth, hardy; fine foliage, good stem; medium size, fair form, lasts well; color "warm crimson-red," delicious perfume; thirty blooms in 1915.

Grange Colombe. (P. Guillot.) H.T. Good growth, very hardy; good foliage and stem; medium size, form very good, lasts well; color "creamy white with salmon-yellow-fawn center," fifty-seven blooms in 1915.

Louise Catherine Breslau. (Pernet-Ducher.) H.T. Good growth, hardy; beautiful foliage, lost early, fair stem; medium size, fair form, fair lasting qualities; color distinct "coral-red to shrimp-pink, shaded reddish coppery orange and chrome-yellow," thirty-three blooms in 1915.

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Mrs. David Baillie. (Hugh Dickson.) H.T. Good growth, very hardy; fair foliage, good stem; spring blooms large, perfect form, lasts well; color "madder-carmine;" fifty-two blooms in 1915.

Mrs. Herbert Hawksworth. (Alex. Dickson.) H.T. Growth good, hardy; good foliage and stem; medium to large size, lasts well; color "ecru on milk-white," tea-rose perfume; thirty blooms in 1915.

Ophelia. (Wm. Paul.) H.T.* Growth good; fine foliage, stem good; perfect form, lasts well; color beautiful—"salmon-flesh, shaded with rose;" twenty-seven blooms in 1915.

Sunburst. (Pernet Ducher.) H.T.* A collector's rose. Fair growth, not hardy; beautiful form; color "cadmium-yellow with yellow-orange center;" thirteen blooms in 1915.

Among the Dwarf Polyanthas may be noted:

Ellen Poulsen. (Poulsen.) "Dark brilliant pink."

Rödhätte. (Poulsen.) "Clear cherry-red."

Varieties Introduced in 1913

Ellie Hartmann. (Nicola Welter.) H.T. Very good growth, very hardy; good foliage and stem; medium size, blooms well, fair form, lasts well, tea perfume; color "old golden yellow."

Killarney Queen. H.T. Sport of the well-known Killarney; slightly brighter, but having same characteristics; thirty-four blooms in 1915.

Lady Dunleath. (Alex. Dickson.) H.T. Has improved greatly since 1914. Good growth, hardy; good foliage, fair stem; medium size, blooms well, beautiful in bud form, lasts well; color "ivory-cream-white to egg-yolk;" delicately perfumed.

Madame Charles Dubreuil. (P. Guillot.) H.T. Strong growth, good foliage and stem; medium size, good form, lasts well; color "salmon-rose, shaded carmine;" thirty-nine blooms in 1915.

Madame Edouard Herriot (*Daily Mail*). (Pernet-Ducher.) Pernetiana; sometimes listed as a Hybrid Austrian Brier. The greatest novelty; fine growth, very hardy; very beautiful foliage, lost early, stem good; medium size, good form, lasts well; color distinct—"coral-red shaded yellow and bright rosy scarlet, passing to prawn-red;" twenty-five blooms in 1915.

Mevrouw Dora Van Tets. (M. Leenders.) H.T. Collector's rose. Hardy, fair growth; fair form, shy bloomer; most distinct shade of "deep velvety crimson."

Mrs. Forde. (Alex. Dickson.) H.T. Good growth, very hardy; fair foliage, good stem; medium to large size, blooms well, good form, lasts well, fragrant; color "deep carmine-rose, on delicate rose-pink, clear chrome-yellow at base of petals."

Mrs. T. Hillas. (Pernet Ducher.) H.T. Fair growth, hardy; fair foliage, good stem; medium size, fair bloomer, beautiful form, lasts well; color "chrome-yellow."

Primrose. (Soupert & Notting.) H.T. Fair growth, hardy; good foliage and stem; large size, beautiful form, lasts well; color distinct—"melon-yellow during summer, early spring and fall having apricot shadings;" ten blooms in 1915.

**Ophelia* is the rose introduced to the commercial trade by the E. G. Hill Co., which is having a notable success as a cut-flower variety. *Sunburst* is also found to be worth while for forcing.—EDITH.

Queen Mary. (Alex. Dickson.) H.T. A collector's rose. Weak growth; beautiful color—"zoned deep bright canary-yellow, crayoned deep pure carmine," very fragrant; eight blooms in 1915.

Willowmere. (Pernet Ducher.) H.T. Fine growth, hardy; fair foliage, good stem; medium size, beautiful form, lasts well; color "rich shrimp-pink, shaded yellow in center;" twelve blooms in 1915.

The novelties of 1914 which promise best are:

Dolly Varden. (Paul & Son.) H. Rugosa. "Light apricot-pink to yellow."

Cecile Custers. (M. Leenders.) H.T. "Lilac-rose to deep rose-pink."

Countess Clanvilliam. (Hugh Dickson.) H.T. "Delicate peach-pink, edged with deep cherry-red." (See plate, facing page 24.—~~EDITOR.~~)

Frau Bertha Kiese. (Kiese & Co.) H.T. "Pure golden yellow."

Frau Math. Noehl. (N. Welter.) H.T. "Lemon-yellow."

Josephine. (Paul & Son.) H.T. "Rosy flesh to salmon-yellow."

Killarney Brilliant. H.T. Sport of the well-known Killarney; much darker in color, but having same characteristics.

Lady Plymouth. (Alex. Dickson.) T. "Deep ivory-cream, faintly flushed."

Margherita Croze. (Ketten Bros.) H.T. "Carmine-purple, changing to purple-rose, shaded deep rose-pink."

Mrs. Charles Reed. (E. J. Hicks.) H.T. "Pale cream, tinted deep peach, to soft golden yellow."

Urania. (M. H. Walsh.) H.P. "Bright crimson."

Waltham Scarlet. (Paul & Son.) H.T. "Crimson-scarlet."

The latest novelties in Climbing Hybrid Teas are *Climbing Richmond* (Alex. Dickson); *Climbing Madame Melanie Soupert* (J. Burrell & Co.); and *Climbing Gruss an Teplitz* (Conard & Jones).

The newest of the other Climbers are *Mary Lovett*, one of Dr. Van Fleet's seedlings, "pearly white;" Walsh's *America*, "delicate pink shading to white;" and *Purity*, a white climber introduced by Hoopes, Bro. & Thomas Co.

We have tested some few 1915 roses for six months. The most promising are:

Jacques Poscher. (Pernet Ducher.) H.T. Light yellow.

Madame Colette Martinet. (Pernet Ducher.) H.T. "Old-gold-yellow, shaded orange-yellow."

In addition, there are two seedlings of Chateau de Clos Vougeot: *Hoosier Beauty* (Dorner), H.T.; and *Admiral Ward* (Pernet-Ducher), H.T. We hope that the latter will prove as good a dark rose as the well-known Mrs. Aaron Ward has proved a yellow. *Constance* (Pernet Ducher), A.B., has been well recommended.

For two years a number of climbers have been introduced which are claimed to be perpetual bloomers. One of these flowered here—Pemberton's *Moonlight*, giving good June bloom and a number of blooms thereafter; but the foliage mildews; color here, pure white; single. Pemberton has also introduced the following as everblooming climbers: *Ceres*, *Galatea*, and *Winter Cheer*. Paul, Leenders and Lambert catalogue new everblooming climbers, which of course are not yet tested.

There are several new men working on hybridization, but Father George Schoener, of Portland, Oregon, is doing splendid work. We trust to see his creations on the market.

The Literature of the Rose

By THE EDITOR

IN the United States, not many books wholly about the rose have been published. The horticultural magazines have presented many articles bearing on roses from time to time. A consultation of Bailey's "Standard Cyclopedia of Horticulture" (third volume, 1915, page 1552) shows reference to thirteen books and fourteen pamphlets on the rose. Of these, five were published between 1846 and 1856, and are practically obsolete. It is not certain that all of the remaining eight are yet in print. A list of these follows:

- THE ROSE.** By H. B. Ellwanger. 1882, 293 pp. Dodd, Mead & Co., New York. (This was long the standard rose book.)
- A BOOK ABOUT ROSES.** By S. Reynolds Hole. 1883, 326 pp. Wm. S. Gottsberger, New York. (An American reprint of a standard English work.)
- SECRETS OF ROSE-CULTURE.** By W. J. Hatton. 1891, 166 pp. Published by the author, Huntington, N. Y.
- ROSES AND HOW TO GROW THEM.** Collected magazine articles. 1910, 199 pp. Doubleday, Page & Co., Garden City, N. Y.
- COMMERCIAL ROSE-CULTURE.** By Eber Holmes. 1911, 165 pp. A. T. De la Mare Printing and Publishing Company New York.
- MAKING A ROSE-GARDEN.** By H. H. Saylor. 1912, 53 pp. McBride, Nast & Co., New York.
- EVERBLOOMING ROSES FOR THE OUTDOOR GARDEN.** By Georgia T. Drennan. 1912, 262 pp. Duffield & Co., New York.
- THE PRACTICAL BOOK OF OUTDOOR ROSE-GROWING.** By George C. Thomas, Jr. 1914, 156 pp. and 96 plates in color, etc. J. B. Lippincott Company. (See advertising pages for details.)

Getting Better Roses

EDITOR'S INTRODUCTION

Elsewhere in this Annual will be found notes as to the relation of the European war to rose-production, and in Dr. Van Fleet's paper on "Possibilities in the Production of American Garden Roses," we are informed that 136 varieties were imported in one year. Of this number, barely a dozen might be expected to show sufficient value in the United States to warrant their continued growth. It is not to be understood that this small proportion is due to poor quality or to low standards among the foreign hybridizers, but rather that it indicates the lack of adaptability to American conditions in most of the rose varieties coming from abroad.

The United States has not been prominent in rose-hybridizing, as may be understood when it is noted that out of 588 varieties of roses listed in the 1914 Official Catalogue of the National Rose Society of England, covering the good roses of all the world, but twenty-six are of American origin—less than 5 per cent!

That roses of American origin are likely to be better adapted to American conditions need not be argued. The notable successes scored by the few hybridizers who have worked in the United States—as witness the Walsh, Van Fleet, Hill, Cook and Montgomery productions, for instance—indicate the possibility of even more notable advances, particularly in garden roses, when American rosarians, properly encouraged, really get to work.

The resources now at command in the species collected in west China by Mr. E. H. Wilson, and the greater knowledge of how desirable rose characters may be transmitted, indicate that the present is a most favorable time to promote the getting of better roses. The checking of European endeavor, in consequence of the Great War, adds another inducement to go forward in rose-hybridization.

It is for these reasons that an especial endeavor has been made to gather for The American Rose Annual all available information and experience in relation to American rose origination. The governing principles are set forth, and a careful reading of the papers in this section will enable an aspiring hybridizer of roses to save years of time, for he may have thus at command the conclusions of experience. To undertake to develop the possibilities latent in hybrids of the numerous species not heretofore used, and to work along the lines indicated by Prof. White and Dr. Van Fleet, would be almost certain to give results of notable character. As one notes the ideals set up for the so-called "commercial" or "cut-flower" roses, there is the thought that the blood of these unused natural species may provide the acute grower with forms and colors of greater attractiveness.

In order to indicate the work already done, a partial list of roses originated by hybridization in America, so far as ascertainable, is added, beginning on page 124. This list is far from complete, after much effort to make it so. Some capable workers seem disinclined to answer letters, and in one case the desired information came only after a half-dozen letters and one telegram had been followed up through mutual friends.

It is intended to carry the list along from year to year, adding to it as rapidly as authoritative information permits.

Let us have American roses for America!

Rose-Breeding

By E. A. WHITE, Professor of Floriculture, Cornell University

IN his excellent book on "Roses: Their History, Development, and Cultivation," the Rev. Joseph H. Pemberton gives a clear and concise analysis of species. In commenting on this table, Mr. Pemberton remarks: "If we examine the table we shall notice two things: (1) the distance removed from the original species of the Hybrid Teas, and (2) that there are many species from which little, if any, advance has been made. . . . Does not this fact indicate the wide field still open to hybridists for the production of new roses?"

Until within comparatively recent years, little was known regarding the laws governing heredity in plants, and much yet remains to be learned. In the past, the results which have been attained by hybridists have been largely those of chance. With the re-discovery of the so-called Mendel's laws in 1900, new light was shed on heredity. Since that time hybridists have conducted their work on a more scientific basis, and wonderful results have been attained with some species of plants. Corn, wheat, tomatoes, and other so-called economic crops have been largely experimented with, and the results to the economic world have been beneficial in the extreme.

Less systematic breeding has, however, been done with ornamental plants, with which, therefore, there seems a vast field for investigation and experimentation.

There never was a greater need for breeding work with roses than at the present time. People are demanding novelties in all lines of florists' flowers, but especially is there a demand for unusual varieties of roses. This is especially true regarding those varieties grown under glass, or the "forcing" varieties. In this field, the Bride and Bridesmaid held for many years a dominant place; but with the coming of Killarney in its many colors, the older varieties were no longer grown. There is probably no more popular rose today than Ophelia; yet other varieties are close competitors, and newer types are placed on the market each year. The present popularity of the small cluster roses, like Gail-Brunner, George Elgar and Baby Tausendschön,

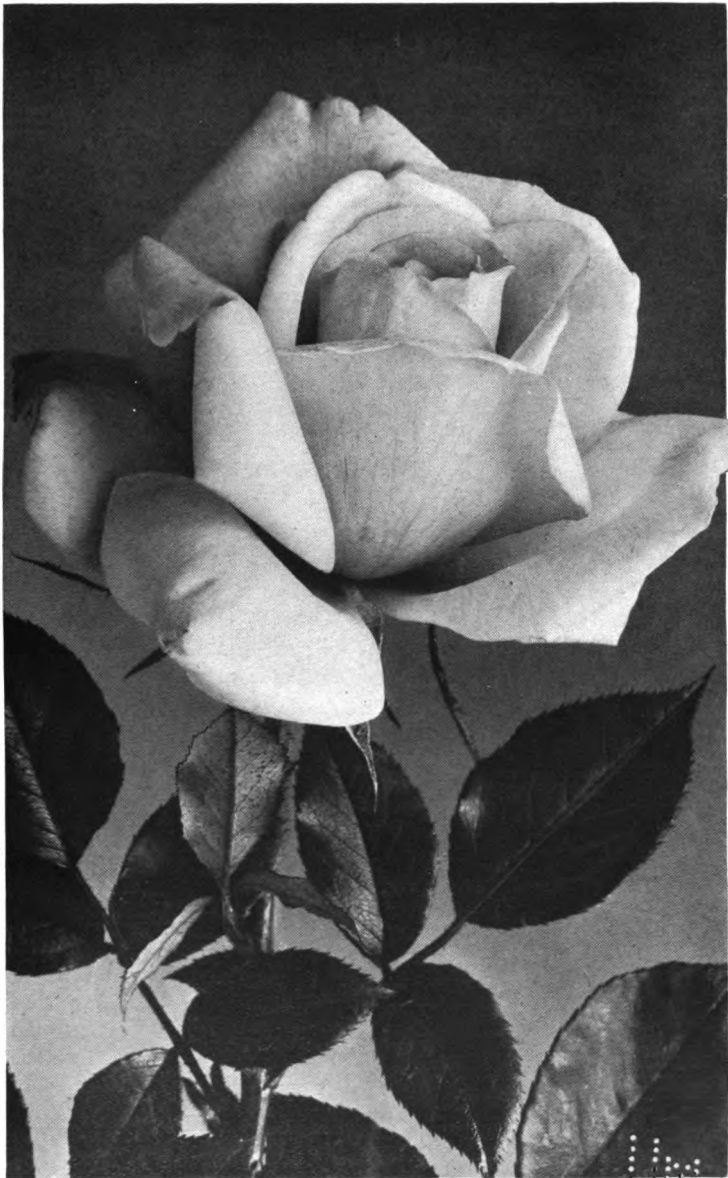


PLATE IV. New Hybrid Tea Rose, COUNTESS CLANWILLIAM
(See page 21)



shows a changed public opinion and the Teas and Hybrid Teas no longer hold non-competitive places in commercial growing.

Many men have realized the need of systematic breeding in the rose family, but few have had the perseverance and determination necessary to get results. A few men, however, have given us some desirable varieties of roses, and to these men present-day rosarians owe much. There is a demand for species of roses adapted to American conditions, and these must necessarily be American-bred. The soil and climatic conditions in European countries are quite different from those in America, wherefore many of the species originated in Europe are unsuited for use in this country. We need strains of American roses which correspond to the type of the American carnation.

More breeding work has been done in America on varieties of hardy roses than on the types grown under glass. *Rosa Wichuraiana* and *Rosa rugosa* have, within recent years, furnished a starting-point for breeding experiments which have been a pronounced success. There is still a demand for improved varieties in these groups, but there is even a greater demand for improvement in those varieties which are "forced" under glass.

Breeders of roses certainly have many difficulties to solve. The family is a large one, and contains many species. Among these species there already exists a large number of hybrids, and the blood is so mixed that it is difficult to begin with pure blood of any particular species.

The science of genetics is based on heredity, and while environment and training influence the development of an individual, heritage or "blood" is largely responsible for the traits of character most prominent. Early studies of plant-breeding were based largely on a study of individual plants. It has been within recent years that interest has arisen in unit characters in individual plants and animals; but with the realization that these characters do occur in all individuals to a greater or less degree, and that they are transmitted to offspring in a rather definite ratio, there has arisen a clearer conception of methods for reproducing desirable characters in the offspring.

It has been stated that in breeding roses there is much complexity. There are many unit-characters which must be transmitted to the offspring, and therefore simplicity of action is

impossible. Among these unit-characters are color, fragrance, size of flower, substance of petals, strength of stem, resistance to disease, character of foliage, and hardiness. To combine all these desirable qualities in one individual requires most careful selection of parents and painstaking breeding, which must necessarily extend over a considerable period of years. The color factor alone is exceedingly complex, as is shown in a most carefully prepared paper on "Heredity of Color in *Phlox Drummondii*," by Dr. A. W. Gilbert, Department of Plant Breeding, at Cornell University, and published in the "Journal of Agricultural Research," July 15, 1915. The general principles which govern heredity of color in phlox govern color in roses, although their application is much more complex in the latter case.

The rose is, therefore, not an easy plant to breed and get marked improved results. The period of "watching and waiting" is a long one. In other words, it is not a plant of "frequent generations" as are many other species of ornamental plants. After the parents have been crossed, it takes a long time for the seed-pods to mature, and after the seeds have ripened they are difficult to germinate. It requires the most careful treatment to get even a fair percentage of germination. The blooming period of the offspring does not follow quickly, and the hybridist has to wait a long period for results. Even when the work has been carried out along modern scientific lines and careful attention has been paid to all principles of genetics, the results are often discouraging.

However, our American men of science are awakening to the possibilities which lie in the rose family, and the future of this plant is promising. Plant-breeders have found corn and wheat wonderfully plastic under scientific development, and the belief is strong that the rose may, in the near future, be developed into types far superior to those of today.

EDITOR'S NOTE.—*The student of rose hybridization will find it of advantage to read the standard American work known as Bailey's "Plant-Breeding," now in its fourth edition. It is published by The Macmillan Company, New York.*

Possibilities in the Production of American Garden Roses*

By W. VAN FLEET

Department of Agriculture, Washington, D. C.

EDITOR'S NOTE.—As may be noted elsewhere, Dr. Van Fleet has produced several of the best climbers of the day. In this article he discusses hybridizing from the position of long experience, and attention to what he has here written will greatly aid aspiring workers with the rose.

ROSE-BREEDING now, as in the past, progresses quite exclusively along commercial lines. The aim of most raisers of seedling roses, here and abroad, appears to be the prompt production of compact-growing and constant-blooming varieties, suitable for the production of cut blooms under glass or in the garden. Introductions of new roses of the Hybrid Tea, Tea, and dwarf Bourbon types suitable for glass-house culture or garden bedding in 1912 numbered ninety-nine, as against thirty-seven in all other classes combined. The following year the disproportion was even greater. The seasons of 1914 and 1915, from best information, would have shown further proportionate increase of the everblooming types if the deplorable war situation in Europe had not interfered.

This is all good work. Many splendid and highly useful varieties have been developed that will long beautify our greenhouses and gardens, providing large revenues for the florist and nurseryman as well. The great value of such roses as General MacArthur, Richmond, Radiance, My Maryland, Killarney, and the gorgeously tinted Pernetianas, appealing in the highest degree alike to growers and flower-lovers, is not to be depreciated. They are precious acquisitions, but it cannot well be denied that continuous-blooming roses, with their strong infusion of tender Oriental blood, are, with very few exceptions, children of exacting cultural conditions and cannot generally be relied on as home-yard plants.

More easily managed varieties than are now available, suited for common dooryard culture under the diverse climatic conditions of our broad country, are needed. For securing diversity of type as well as excellence of bloom, all available

*Published by permission of the Secretary of Agriculture.

vigorous species of pleasing aspect, and their strong-growing garden forms, should be utilized, crossing and blending them together and with highly developed florists' varieties, in the hope that in some of the progeny will be combined the really desirable characters of the parent. This work should be widely carried out in all parts of our greatly diversified country, particular attention being paid to the raising of seedlings from species or varieties naturally adapted to the location.

The first American rose hybrids to gain recognition were probably the beautiful Noisette climbers raised in Charleston, S. C., as early as 1816. They are combinations of the ever-blooming Chinese rose and *Rosa moschata*, the wild musk rose of the Himalaya Mountains. Whether produced by intentional or natural hybridization, the introduction of this free-growing decorative type, which has since reached its highest development in the incomparable golden-flowered Marechal Niel, reflects high credit on the originators. In 1830, Harrison's Yellow, absolutely indispensable for dooryard adornment throughout practically our whole country, was sent out from a New York nursery. It bears evidence of admixture between the Asiatic *Rosa lutea* and the Scotch rose, *R. spinosissima*, and is the only form of the bright yellow *Rosa lutea* thoroughly at home in our climate.

The Queen of the Prairies type of climber, formerly planted in great numbers but now superseded by the new Wichuraiana and multiflora ramblers, was produced, it is well known, about the year 1843 by Samuel Feast, a Baltimore nurseryman. The wild Michigan or Prairie rose, *R. setigera*, is plainly the dominant parent, and the perfume rose of southern Europe, *R. gallica*, is assigned as the other factor, though the progeny, like the native *setigera*, is scentless. Baltimore Belle is thought to have had a Noisette Rambler as the pollen parent.

Hitherto there is little evidence of intentional breeding work, in the modern sense, among rose-growers. Superior seedlings or mutations of chance origin were propagated when observed and disseminated by nurserymen. Rose-breeding for the avowed purpose of developing new varieties adapted to the needs of the country may be said to have been initiated by the late H. B. Ellwanger, of Rochester, N. Y., writer of one of the

best rose books ever published. He worked with the best varieties and species that came to his hand, and made an especial effort to inject diversified blood into Queen of the Prairie and other of the Feast climbers, but they proved then, as since, sterile, refusing to produce seeds or fertile pollen under all available conditions. Marshall P. Wilder, a seedling of General Jacqueminot, introduced in 1884, is the best known of Mr. Ellwanger's productions and is a most excellent garden rose.

Few notable results appear to have been accomplished by American rose-breeders after Mr. Ellwanger's efforts until the closing years of the past century, when the general dissemination of the hardy and vigorous Asiatic species, *Rosa rugosa*, *R. multiflora*, and *R. Wichuraiana*, suggested new possibilities of combination with existing successful types. The rugosa rose appears to have been first used in this country by E. S. Carman in New Jersey and J. L. Budd in Minnesota, though Jackson Dawson, of the Arnold Arboretum, produced hybrid seedlings as early as 1892. Few of these early crosses have been widely cultivated, Agnes Emily Carman, progeny of rugosa pollinated with Harrison's Yellow, and the Arnold and Ames roses, both rugosa and "Jack" crosses, being best known.

Rosa multiflora and *R. Wichuraiana* next received attention, the first at the hands of Jackson Dawson, resulting in the well-known Dawson climber (*multiflora* × *Jacqueminot*), and others. The first hybrids of *R. Wichuraiana* given to the public were sent out by W. A. Manda, of New Jersey. The variety Gardenia (*Wichuraiana* × *Perle des Jardins*), often termed the "hardy Marechal Niel," never has been superseded and is still widely grown. The work was taken up by M. H. Walsh, of Massachusetts; Jackson Dawson; James A. Farrell, of Pennsylvania, and others, the appearance at this time of the superior climbing form of *multiflora*, known as Crimson Rambler, lending new interest to the production of tall-growing roses.

The writer's experience in raising hybrid seedlings from various rose species has convinced him of the great desirability of disseminating information—none too plentiful—of the breeding characteristics of native and Old-World rose species, in order that efforts for their utilization may not be too greatly duplicated. Much has been done with a few of the rugged and free-

growing natural types, but the surface of rose-breeding for American home-yard adornment has barely been scratched. A brief review of the most promising species for immediate effort may be in order, taking first those native to or already well disseminated in North America.

Rosa rugosa must be regarded as of first importance. While it appears to be found naturally growing only in Japan and eastern Siberia, it is at home wherever planted in the United States and Canada. The plant endures great heat and is scarcely destructible by cold, but the blooms are more lasting and better appreciated in northern latitudes. *Rugosa* varieties and hybrids bid fair to become the most reliable and highly prized bush roses for the northern and Prairie States, and, when the choicer forms are known, to be valued far down toward the frostless regions. *Rugosa* hybrids, as a rule, carry their vigor, beauty of foliage, frost- and disease-resistance well into the third and fourth dilution with Tea and Remontant blood, while gaining greatly in beauty of bloom and coloring; but the faults of excessive spininess and weak flower-stems also persist; and the *rugosa* type may be regarded as especially adapted for the garden and not likely to produce varieties having value for cutting and exhibition.

The *rugosa* type has been hybridized with almost all the cultivated species and with many of the garden forms, resulting in a considerable number of varieties of great botanical interest and not a few of considerable garden beauty. Apparently not much more is to be expected from primary crosses except as a starting-point with newly found species, but the hybrids should be extensively used whenever they prove fertile, which is very rarely the case among those bearing double flowers. The most reliable of the latter are *Delicata*, pink; *Germanica*, deep red; and *Souv. de Pierre Leperdreux*, crimson. Double white-flowered *rugosas*, in my experience, rarely fruit, and if seeds are occasionally produced they germinate feebly, if at all. The single white variety, however, seeds freely when properly fertilized with good pollen from double roses, and the resulting progeny usually shows a fair percentage of plants with well-formed double blooms, fragrant and freely produced. The work of building up acceptable *rugosa* varieties, it must be

admitted, is excessively slow—one must be content with the prospect of one or two real successes in a lifetime of effort.

Rosa Wichuraiana, on the other hand, gives quick and generous response to all well-considered breeding efforts. Most of the charming new rambling varieties, now so plentifully grown, are the direct result of pollinating the type or natural wild form of *Wichuraiana* with the best garden roses, including Teas, Hybrid Teas and Remontants. So susceptible is this oriental species to foreign pollen that if grown near other varieties blooming at the same time it rarely reproduces itself from seed. No other species so richly rewards the breeder impatient for results, but its ease of manipulation has rather flooded the market with varieties lacking distinctiveness.

What the rose-loving public now demands is large-flowered *Wichuraiana* climbers of varied coloring, having blooms approaching the size and finish of the indoor and exhibition varieties, but with the vigor and foliage advantages of the type and earlier hybrids. To secure these qualities it appears necessary to use as seed-producers *Wichuraiana* hybrids resembling the type, but one or more removes from the wild form.

Thus the climber, Dr. W. Van Fleet, was raised from seeds of a *Wichuraiana* × *Safrano* seedling (showing little of the tea-scented pollen-parent except in reddish shoots and longer stamens), pollinated with *Souv. du Pres. Carnot*. The result practically places the highly finished *Carnot* blooms on a rampant hardy climber, from which buds with 18-inch stems may be cut by the armful in its season of bloom.

Silver Moon is the offspring of Cherokee rose pollen on the stigmas of a cross between *Wichuraiana* and *Devoniensis*, the latter a strong-growing Tea rose, possibly having traces of the Indian *Rosa gigantea* in its composition. This hybrid differed from *R. Wichuraiana* only in its fewer large blooms produced late in the season, and the very sparing way in which it fruited. *Wichuraiana* hybrids of the better class are rarely fertile, and often tend to dwarfness in their seedlings, when they can be bred at all. A race of everblooming *Wichuraiana* of bushy growth will no doubt be eventually developed.

Rosa multiflora in its typical form does not promise much, but the progeny of *Crimson Rambler* and the charming dwarf

Polyanthas offer fine grounds for future breeding work. The weakness of this type is the susceptibility of the foliage of many varieties to mildew.

Rosa lutea (Harrison's Yellow).—Reference has already been made to this charming variety. The pollen has been quite extensively used on *R. rugosa* and other species, but thus far has given little result except in the production of the dark crimson Rugosa hybrid, Agnes Emily Carman. I have raised some very attractive yellow and coppery flowered crosses of Harrison with rugosa alba, but only disappointment has followed its use with other varieties. Plants of Harrison's Yellow in dry situations occasionally seed with some freedom; but, although many hundreds of chance or self-fertilized seeds have been sown, I have never known one to germinate, and have never been able to secure seeds by pollinating its blooms from other roses, though as many as 600 trials have been made in a season. All seeds produced by this fine old variety should be planted in the hope that some will grow and in time help to solve the riddle of its origin.

Seeds of other forms of *R. lutea*, such as Persian Yellow, Austrian Copper, etc., are quite as refractory, none germinating under my observation. Persian Yellow is, however, the pollen parent of Lord Penzance, one of the best of the Sweet-brier hybrids, and also through Soleil d'Or, is the dominant parent of the new Pernetiana race. It may well be used in this country.

Rosa bracteata (Macartney).—This beautiful white-flowered climber, native of eastern Asia, but fairly well established in the South, has been used very little for breeding purposes. But few varieties are known, the chief one, Maria Leonida, not always expanding its blooms. It is usually termed a tender species, but is quite hardy at Washington, D. C. I have found it to seed freely when pollinated with many varieties and other species. The few crosses that have bloomed include a lovely pink-flowered hybrid with *Rosa carolina*, with extremely long-pointed buds; and a fragrant, double-flowered, pure white variety of bushy form, the result of using pollen of the scentless Frau Karl Druschki. *R. bracteata* promises well for the production of varieties suited to at least the South.



PLATE V. Flowering Branch of ROSA HUGONIS
Flowers clear yellow. This photograph, supplied by Dr. W. Van Fleet, shows them about half natural size. (See page 35.)



Rosa laevigata (Cherokee).—Though long considered a native, the Cherokee rose is now believed to have originally been imported from China or Formosa. It is widely naturalized in the South, extending on the banks of irrigating canals far into Texas. Where it is sufficiently hardy to bloom well it is highly prized for its large and beautiful white blooms and shining deep green foliage. Countless attempts have been made to blend it with the choicer garden roses, but failure has been so constant that Cherokee rose-breeding has been pronounced impracticable. The writer has squandered whole seasons of work on the Cherokee, and has little to show for it except Silver Moon and a bushy seedling producing apple-blossom-pink, semi-double blooms, of exquisite fragrance but of little garden value. Scores of hybrid offspring of the choicest parentage have been grown from this species only to perish before flowering, often without divesting themselves of immature foliage. A hybrid, Cherokee \times Marechal Niel, promised much at the outset, repeatedly sending up shoots 8 to 10 feet high, only to have the juvenile-looking foliage fall before full development, and the shoots wither away. This variety was grown in the greenhouse and outside, on its own roots, budded on both parents and on other stocks, in the East, and was also well established in a favorable location in California; but it perished after four years of trial without developing a bloom. The Cherokee rose, like Harrison's Yellow, is indeed a hard nut for the rose-breeder to crack; yet it has developed varieties of value like Anemone, a lovely pink-flowered form, thought to have an infusion of Tea-rose blood; and efforts to blend it with other types should not be abandoned.

Rosa rubiginosa (Sweetbrier) and *R. canina* (Dog rose).—The pleasing results obtained by the late Lord Penzance by crossing in England the Eglantine or wild Sweetbrier rose with various garden roses is known to all in the form of the Penzance hybrids, charming as hedge or dooryard roses, with their bright-colored blooms and scented foliage. Trials in this country, however, have not added new varieties comparable to those produced abroad, and the same may be said of the Dog rose, now used in hybridization to some extent abroad. Both species have foliage very susceptible to fungous troubles in our climate, and have hitherto failed to give good results, when

used for breeding purposes. Many indifferent forms of the Sweetbrier of the *Rosa agrestis* type, with foliage of faint odor or altogether scentless, abound here, and care should be taken to secure the true *R. rubiginosa* if it is desired to use the species.

Rosa setigera, the Prairie rose.—This valuable native should be used freely where hardiness and vigor are especially desired. Although the Samuel Feast seedlings have never been changed by the efforts of breeders, the type remains to be worked with, and promises well when combined with free-growing Asiatic species. American Pillar, which has won wide popularity here and abroad, came from a *Wichuraiana* × *setigera* hybrid, pollinated with a bright red Remontant rose. Not all crosses with *setigera*, however, are good. When the species was bred with Hybrid Teas, the result was a number of exceedingly bright-colored varieties with thin unattractive foliage.

Rosa carolina.—This tall and vigorous native of our eastern lowlands without doubt has possibilities of a high order. The long-budded hybrid with the Macartney rose, referred to, appears desirable. Other cross-bred seedlings are on the way.

Rosa californica.—This promising species may be regarded as the Pacific Coast representative of *R. carolina*, though there are some rather important botanical and horticultural differences. The large panicles of pale pink flowers are borne through a long season, and there appears to be a decided tendency toward doubling of the blooms and the production of autumn inflorescence when grown in the East under good cultural conditions. *R. californica* has been hybridized with *R. rugosa* in Europe, and readily accepts the pollen of other species and varieties. I have cross-bred seedlings of this species under way.

Other native species.—With the exceptions above noted, I have found most native species intractable to hybridization, seldom producing sound seeds under controlled pollination, and showing little change of type even when hybrids have been produced. *R. virginiana*, *R. blanda*, *R. Fendleri*, *R. Woodsii*, *R. humilis*, *R. Sayi*, *R. nitida*, and others have repeatedly been tried without encouraging results, the efforts extending over twenty years. Most of these species will cross with *Rosa rugosa*, but except for botanical collections the immediate progeny is seldom worth growing, and the succeeding generations of self-

or cross-pollinated seedlings show little change. *Rosa virginiana* and others, however, have given rise to charming double and white-flowered mutations under varied cultural conditions, and should not be neglected. The delightful fragrance of many species of this group is an encouragement, as also their entire adaptability to climatic conditions. There are some other native species of promise that do not appear to have been used for the production of new varieties.

New exotic species.—Some very beautiful rose species of great breeding interest have been discovered of late years, mainly in central and western China, and are slowly being introduced to American and European cultivation. At present, the most promising are:

Rosa Soulieana.—An extremely vigorous species of multi-flora type, less hardy in wood but with far more resistant foliage and larger blooms, very plentifully produced. Some botanical specimens of *R. Soulieana* show light yellow flowers, but those available in this country are of the white-flowered type. *R. Soulieana* appears to be quite as readily hybridized as *R. Wichuraiana* and may confidently be expected to produce varieties of interest. The only seedlings yet bloomed, with Cabbage or *Rosa centifolia* varieties as pollen parents, have delightful semi-double blooms, shell-pink and light crimson in color, fragrant and beautifully formed. The hybrid plants are rampant in growth, with very spiny stems, and preserve the resistant foliage of the species. The cross with *Rosa setigera*, as yet unbloomed, is especially vigorous.

*Rosa Hugonis** and *R. xanthina* are early-blooming, yellow-flowered species of great promise as ornamental shrubs for doorway embellishment in this country in their natural state, and should be capable of developing varieties of even greater attractiveness. There is some confusion between the two forms as introduced to cultivation here, but the one known as *R. Hugonis* appears to afford the better opportunities for breeding, as it seeds with great freedom and appears to hybridize readily with other wild and cultivated roses. Seedlings of *Hugonis* × *rugosa*, white variety, and *Rosa altaica*, are the first to bloom, to both of which it has imparted much of its yellow coloring. *R. xanthina*

* See picture of *R. Hugonis*, facing page 32.

has given plants with double yellow blooms from collected seeds, but as yet does not fruit well here; more fertile forms may in time be imported. The seeds of *R. Hugonis* are very slow in germination, only a few coming up within two years. As the ungerminated ones appear sound, some may eventually grow.

Rosa Moyesi and *R. Fargesii* are two beautiful Chinese species of the *R. macrophylla* type, little known in this country. They are strong growers when established on their own roots, quite hardy, and produce showy blooms of great substance, deep brownish red in color. *R. Fargesii* has the darker flowers, but both are exceedingly attractive, and if they will "nick" with improved garden roses, very distinct varieties may result. I have not heard of either species fruiting here, but the pollen has been used here and abroad, apparently with good results.

Rosa setipoda is also an unusually attractive species, with nearly spineless branches, fine large resistant foliage and large clusters of lively pink blooms. Like the preceding species, it has not yet fruited under my observation, but the pollen appears effective on other species and garden varieties. It should impart good characters to its hybrids if they are successfully produced.

Rosa Willmottiae has a very distinct and pleasing appearance when in bloom. The bright pink blossoms are freely produced in graceful sprays very early in the season, but the pretty foliage does not well endure our summer conditions, falling an early prey to "black spot" and other fungous troubles. It fruits sparingly, and the pollen is effective at least on *R. rugosa* and *R. setigera*, but the foliage weakness is so pronounced that little can be expected from hybrids in our climate.

Rosa sertata and *R. floribunda* are Chinese novelties, highly praised from the European standpoint, but their utility for the Western hemisphere has not yet been tested. *R. sertata* is an excellent grower in Washington, D. C., and is said in effect to be a very superior wild rose of the *R. Willmottiae* type.

The list of hopeful species is far from being exhausted. Only the most prominent have been mentioned. New species and highly important local types are constantly brought forward. The era of intelligent rose-breeding for outdoor effects has scarcely dawned, and the wealth of material at hand suggests the widest use by patient and hopeful workers.

Some New Roses Introduced by the Arnold Arboretum During the Past Decade

By E. H. WILSON, Arnold Arboretum

Author of "A Naturalist in Western China"

EDITOR'S NOTE.—There is little realization of the immense value to gardens and parks of the work done under Prof. C. S. Sargent at the Arnold Arboretum, at Jamaica Plain, near Boston. In addition to the collection and planting of everything native to America that will grow outdoors there, systematic investigation of the rest of the world's plant resources has been undertaken. One of the chief investigators has been the great botanist and writer, E. H. Wilson, who has conducted four notable expeditions to western China during eleven years, with the result of adding more than 1,500 plants hitherto unknown to our gardens. Mr. Wilson's books, articles and lectures are alike intensely interesting. He has given particular attention to the rose, and what he here writes may be accepted as authoritative.

IT has been said that "Roses are made—not discovered." This is largely true since nearly all the roses in general cultivation have been produced in gardens. But bricks cannot be made without clay, neither can garden roses arise spontaneously. In both cases, raw material is absolutely necessary. Thanks mainly to the labors of the last hundred years, the garden roses of today have reached a high state of perfection, but in their evolution only a comparatively few species have played a part. When we consider for a moment the array of wild roses which have so far not been utilized, and give due heed to the fact that the hybridizing of lowly forms has largely given us what we enjoy today, it would be fatuous to imagine for a moment that the rose has reached its zenith.

For more than forty years the Arnold Arboretum has been busily, persistently, and continuously employed in bringing together from every part of the north temperate region every kind of hardy or possibly hardy woody plant. As one result of these activities many new species of roses have been brought into cultivation. To go over the whole field of forty years would entail more labor than I have leisure to give and require more space than the Editor would allot. As a compromise, therefore, I propose to mention a few of the more important species of roses, with one exception all from China, which during

the past decade the Arnold Arboretum has been instrumental in introducing to this country.

About twenty years ago the horticultural world was electrified by the appearance of a rose styled "Crimson Rambler." It fired popular imagination; it was a new type of garden rose and everybody wanted it. The rosarian seized upon it and the popular demand it created, and a new group of roses, which has completely transformed the rose-garden and pergola, has been evolved. In June of 1913 the wild prototype of the Crimson Rambler blossomed for the first time in this country in the Arnold Arboretum, where it was raised from seeds collected in north-central China by William Purdom in 1910. This wildling has been named *Rosa multiflora* var. *cathayensis*, and is a rose of rare beauty and of great potential value. The flowers are borne in large clusters, as in all Rambler roses, and are clear pink, each 2 to 2½ inches across, single of course, with a mass of yellow stamens; the foliage is perfect, and the plant is a vigorous grower and is absolutely hardy.*

The rose to which the Swedish botanist Thunberg, in 1784, gave the name "multiflora" has large trusses of small white flowers and grows wild only in Japan and southeastern Korea. It was introduced from Japan to France about 1862. In 1905, John G. Jack discovered in Korea and collected seeds of a rose somewhat similar to Thunberg's but with larger flowers. When the plants raised from these seeds flowered the rose was found to be distinct from all known species, and was appropriately named *R. Jackii*. The stems trail flat over the ground, the leaves are lustrous green. The pure white flowers are fully 2 inches in diameter and are borne in wide many-flowered clusters. It is perfectly hardy and blossoms in late June or early July, fully two weeks later than *R. multiflora*, and is a first-rate garden plant to which the hybridist should devote some attention, with a view of extending the length of the flowering season of Rambler roses.

In 1816, at Charleston, S. C., the Chinese Monthly rose (*R. chinensis*) and the Musk rose (*R. moschata*) were successfully crossed and the world came into possession of the first Noisette rose. This strain subsequently produced such grand old

*See illustration, facing page 40.

roses as Solfaterre, Aimée Vibert, Lamarque, William Allen Richardson, and others. They were a little fastidious, perhaps, but the color and fragrance were delightful, and it is much to be regretted that the class should now have fallen into disfavor. Both parents are tender, and the Musk rose is of weak constitution. But there are now known other Musk roses: One from the Himalaya (*R. Brunonii*) has in California been crossed with the prototype of the Tea rose (*R. gigantea*), and there have resulted such roses as Belle Portugaise, Montecito, Montariosa, and others, constituting a new race of roses, valuable for California.

The Himalayan rose is also tender in New England, but China comes to the rescue with some six different species of Musk rose, and one of these (*R. Helenæ*) has proved perfectly hardy in the Arnold Arboretum. Raised from seeds collected in central China in 1907, this rose flowered with us for the first time in 1913. The plants are now 5 to 8 feet tall and more in diameter, with arching stems, and in late June were covered with masses of pure white and delightfully fragrant flowers. The flowers are about $1\frac{1}{2}$ inches in diameter and the stamens are golden yellow; the foliage is light green, of good size, and of much substance. Here again is a hardy rose of great beauty and of untold potential value in the breeding of new races of roses.

More hardy yellow-flowered roses are needed, and in *R. Hugonis* there are great possibilities. This beautiful rose came to us from the Royal Gardens, Kew, where it was raised from seeds received from north-central China in 1899. It is an upright-growing shrub 6 to 8 feet tall and more in diameter, with slender and spreading branches. The fragrant flowers, each about $2\frac{1}{2}$ inches across, are produced all along the branches, and so freely are they borne that the branches become yard-long sprays of soft yellow. The leaves are small and of a pale green hue, but the foliage is ample, and as I write in mid-November is still on the shrub, and has assumed a dark purple tint. (See illustration, Plate IV, facing page 32.)

In habit, foliage, and manner of flowering, *R. omeiensis* much resembles the foregoing, but it is a more vigorous shrub, growing 15 to 20 feet tall on the mountains of central and western China, and the flowers are white and smaller, each having only four petals, arranged like a Maltese cross.

These two roses with their yellow and white blossoms are excellent companions, making fine specimen plants. It is also probable they would make valuable hedge-plants. They are among the earliest of all roses to open their flowers.

One of the most beautiful of all hardy roses is *R. Moyesii*, with saucer-shaped flowers 2 inches in diameter, which vary in color from rich reddish crimson to velvety crimson. This rose has upright stems and spreading branches, and is a very vigorous grower. Very similar to the preceding in habit of growth and equally vigorous are *R. caudata*, *R. Davidii*, *R. banksiopsis*, *R. saturata* and *R. corymbulosa*, all new species. In these the flowers vary in color from pink to rose and red, and they differ one from another in their leaves, quantity of flowers in each truss, and in many technical and essential points. All have distinct charms and are valuable additions.

Two distinct species with stout-arching stems and spreading branches densely armed with large prickles are *R. setipoda* and *R. Sweginzowii*, and these produce their rose-red flowers in large clusters about the end of June. More slender growers with twiggy branches are *R. sertata*, *R. multibracteata* and *R. Willmottiae*, which have pure pink to rose-colored flowers and small gray-green leaves. Lastly I may mention the low-growing *R. bella*, which opened its flowers for the first time under cultivation during the past summer. This is a dense, compact shrub, growing 2½ to 4 feet tall, and in June it was, literally speaking, a blaze of rich red flowers each 2 inches across. Like all the other roses mentioned here it holds its foliage in good condition very late in the fall.

In gardens large and small wild roses for their own sake deserve wider recognition than is at present accorded them, for in addition to the beauty of their flowers, so freely produced in season, they bear in the autumn masses of brilliantly colored fruits.

Incomplete as this short note is it would be much more so did I in closing omit mention of the work accomplished in the field of rose-breeding by the Superintendent of the Arnold Arboretum, Jackson Dawson. This grand old gardener has ever been a zealous devotee of the rose, and, his multifarious and onerous duties notwithstanding, has found time to raise



PLATE VI. *ROSA MULTIFLORA* var. *CATHAYENSIS*
(Photograph supplied by Mr. E. H. Wilson. See page 38.)



by hybridization a number of valuable garden roses, while in some groups he was the pioneer. The Dawson rose (General Jacqueminot \times *R. multiflora*) was one of the very first of such crosses made, and *R. Jacksoni* (*R. rugosa* \times *R. Luciae*) was perhaps actually the first *rugosa* \times *Wichuraiana* hybrid. Other good hybrids raised by him are W. C. Egan, Arnoldiana, Lady Duncan, Farquhar, and the Sargent rose.

EDITOR'S NOTE.—A list of roses hybridized by Mr. Dawson will be found on page 125.

Father Schoener's Endeavors

By JESSE A. CURREY, Portland, Ore.

ROSARIANS throughout the world who have known of the great work being carried on by Rev. George Schoener, the village priest of Brooks, Ore., were greatly shocked early in October when they heard that fire originating in an adjoining house had destroyed his church, home and garden. His choice collection of wild roses, representing practically every known species, were burned off close to the ground and the chances are they will never recover, for in the intense heat of the fire the earth was baked, and probably the roots have been damaged beyond recovery. Not only did Father Schoener lose his collection of wild species but he also lost practically all of his seedlings of the last few years, and nearly all of his seeds of this year.

This year Father Schoener expected to have some interesting facts regarding rose-culture to give to the public, but his library, his notes and his records were also destroyed. When he received a request from the Editor of the Rose Annual for an outline of his achievements during the past year he was too ill to write; therefore at his request I shall endeavor to tell something of the work this remarkable man has undertaken.

Father Schoener's study of the rose has been profound, and all the experiments have been based on the strictest scientific lines. In the fall of 1914 he harvested 120,000 good ripe rose seeds from hybridization, having started the pollenizing early in May and continuing until August 5. During the previous winter he studied the pedigree of the best roses and also did a

vast amount of research work regarding the characters and possibilities of untried forms of the lutea, Wichuraiana, rugosa, microphylla, bracteata, rubiginosa, sericea and many other species. It was from this extensive line of study that in the spring he started to work, with the result that he harvested his 120,000 seeds.

In speaking of this work Father Schoener recently said: "Max Singer's 'Dictionary of Roses' enumerated 35,000 pedigreed varieties, mostly all originating from gallica, damascena, indica, odorata, Chinese and Bengal blood, also some moschata, while a few show sempervirens and lutea infusion. Having seen that the great number of present-day roses have originated from only a few of the species, I realized the vast field in front of us for development. To get order out of the very chaotic condition of today it is first necessary to establish in your mind certain ideals and work toward them, and this is what I endeavored to do. The first ideal to get established is a standard of requirements of the rose for the present, of which healthy constitution stands first.

"Having fixed in my mind the ideals I desired to reach I outlined the other requirements I thought necessary, and after fixing such outlines I studied the dominant, latent and recessive characters of the best pedigreed roses. Just according to what I wanted I selected my mother or seed roses and on them used the pollen of what I considered the necessary father roses. In all cases I endeavored to avoid any inbreeding. Furthermore I predisposed the seed of the mother roses by special feeding or starving as the individual cases required, and I treated the pollen parent the same way, so that I got the bushes and seed just in the condition I desired."

Father Schoener did all of the rose work alone, often laboring from 5 o'clock in the morning until 9 o'clock at night in high summer. He made over 1,500 combinations in roses that year, to say nothing of his other work with vegetables, fruits, ornamental shrubs, corn; and his work also with the gladiolus was considerable.

Of the 120,000 rose seeds harvested in the fall of 1914—and immediately sown, and it must be remembered that all of the hybridizing was carried on in the open air, the pollenized blooms

being carefully covered with bags securely tied to prevent insect disturbances—about 25,000 seeds germinated. Not having any greenhouse or equipment to carefully protect these he lost quite a number. The weak ones he pulled out; and the net result of the 1914 work was about 4,000 very promising seedlings. All these, except seven, perished in the fire in about twenty minutes.

During 1915, the result of hybridizing was far greater, but all save about 10,000 seeds were destroyed in the fire. His combinations in 1915 represented some which have always been regarded as quite difficult. Despite the fact that Souv. de la Malmaison is considered sterile, Father Schoener nevertheless succeeded in pollenizing it with the Lyon rose. He had five fine seed heaps of this combination which the fire destroyed. Among the other notable combinations he succeeded with this year were Macartney on the Lyon, Soleil d'Or on Wichuraiana, Macartney, *R. ferruginea* and *R. microphylla*. He also succeeded in crossing the Lyon with Conrad F. Meyer, and made a number of other combinations, all of them entirely new so far as any pedigreed list is concerned.

Many of Father Schoener's efforts are directed toward overcoming the faults of the wonderfully colored Pernetianas, particularly in regards to establishing a better foliage. His efforts in this direction far surpassed his own expectations for the first year. Father Schoener when asked about his work said: "My work of the past year was systematically based on the Mendelian laws of heredity. Some experiments I made especially with regard to the relation of the color-pigment in the pollen-germ, and I believe there is a big field for development in this line. In working on the Mendel theory it must be taken into consideration that the Abbot Mendel experimented only with peas. While his theory works mathematically correct in many annual and perennial plants it is a far different proposition with woody plants, where no fixation of seed is the object. In roses the differentiating characters must be found out beforehand and the application of Mendel's theory to roses is a great field for further investigation."

The Rose Pioneers of America

By THE EDITOR

AS has been elsewhere brought out in this issue of the American Rose Annual, comparatively few of the varieties of roses now in commerce are of American origination. Yet in an increasing and most important degree we are coming to have in the United States roses which are the result of painstaking work in hybridization here.

It may be possible later to present a complete and accurate list of the roses hybridized in America, and to do substantial justice to all the patient workers who have produced them. It is practicable now only to allude briefly to some of the rose pioneers who have worked and are working with actual success, and to print a list that is accurate as far as it goes.

The interesting and important work of E. G. Hill is presented in another article.

Bearing a most important relation to the production of Hybrid Tea roses is John Cook, of Baltimore. Mr. Cook is a veteran in working with the rose. His first successful hybrid, *Souvenir of Wootton*, was sent out in 1888, and but few years have passed since without having a real achievement to record for Mr. Cook. To have in succession come forth from one grower *My Maryland*, *Radiance*, *Panama*, and *Francis Scott Key* is certainly an evidence of the extremely high standard set by Mr. Cook, as well as of his discrimination in selecting his winners. In a recent letter he says, referring to the roses that have actually gone into commerce under his name: "Hundreds of other seedlings were raised, with fine flowers, but were lacking in stem and growth, and were never sent out."

Alexander W. Montgomery, Jr., of Hadley, Mass., is responsible for three good roses now in commerce, of which two, *Mrs. Charles Russell* and *Hadley*, are very much in the rose eye of the cut-flower growers and the public today. There is much to hope for from Mr. Montgomery, and he has for 1916, it is understood, an interesting showing.

Edward Towill, of Roslyn, Pa., is responsible for *Milady*, and he intimates that another rose of notable merit is coming.

Hoosier Beauty is a product of hybridization at the great rose-growing plant of the Dorners, in Lafayette, Ind., and ought to be the forerunner of other good sorts.

Fred H. Howard, of Los Angeles, Calif., is working with much care, and while he has results, they are not yet in commerce and are therefore hardly within the point of view of the Annual.

It will be noted thus that at many separated points there is work going forward on the Hybrid Teas used for cut-flower growing, some of which are sure to be good garden roses.

In outdoor roses, more particularly in climbers, the United States has scored heavily within the past dozen years. Indeed, it may be said that American hybrids are notably superior to any imported varieties, for American growing, and some of the American seedlings have made vigorous headway with our rose-growing friends on the other side of the Atlantic.

Dr. W. Van Fleet, who began his work with roses all of thirty years ago, under the inspiration of the late E. S. Carman, is now with the Department of Agriculture, and he has kept up all through this time steady progress. As will be noted in the list which follows, he has worked principally with *Rosa Wichuriana* and *Rosa rugosa*. His thoughtful paper elsewhere in this issue of the Annual not only gives an idea of his methods of work, but is certain to be of great aid to others who are interested in producing better outdoor roses. With such encouragement the break to the hardy everblooming climber ought soon to occur; and if Dr. Van Fleet succeeds in getting crosses with the lovely yellow *Rosa Hugonis*, a most interesting vista is opened to us. (We owe thanks to Dr. Van Fleet for the photograph of *R. Hugonis* shown facing page 40.)

The frontispiece to the Annual shows M. H. Walsh's rose Excelsa, a rose which needs only to be seen to justify the honor paid to it by the American Rose Society in the shape of a gold medal. (Mr. Walsh says of the picture, by the way, that it is "artistic and correctly produced as far as foliage, color and growth are concerned.") He has been growing roses since he was eleven years old, and runs parallel to "Gurney" Hill in his half-century relation to the queen of flowers. He says: "Roses were my first love, and I still cherish them and am happy

in growing and experimenting with them. I have now eleven acres of roses in cultivation and grow roses exclusively. . . . I am experimenting at the present time by crossing certain species of roses, in which way new blood is imparted from the original variety." Mr. Walsh has to his credit a portentous array of medals and certificates, not only from American associations but from societies abroad.

The veteran superintendent of the Arnold Arboretum, Jackson Dawson, is another of the half-century rose workers to whom honor is due. His hybridizing work began with the introduction of the Dawson rose, in 1888, and in the list presented in this Annual it will be seen that he has produced climbers of exceptional quality, and one single rose, Arnold, which, not yet by any means well known, is certain to be used for lawn specimens in increasing degree.

A very different type of climbing rose has been worked out at the old establishment of Hoopes, Bro. & Thomas Co., West Chester, Pa., under the hands of James A. Farrell, assistant superintendent of one of the nurseries. Mr. Farrell was guided in his earlier years by that notable botanist and able nurseryman, Josiah Hoopes, of whom he writes as follows:

"Aside from his wonderful knowledge of conifers and other ornamental trees, Mr. Hoopes was a great lover of the rose, and under his instructions in the year 1898 I fertilized *Rosa Wichuraiana* with pollen from several Tea and Hybrid Tea roses, resulting in the production of four distinct varieties. Three of these were named Edwin Lonsdale, Prof. C. S. Sargent, and Robert Craig.

"The fourth was a large single pink variety, which I crossed with American Beauty, producing the rose named and disseminated as Climbing American Beauty.

"This same pink seedling was again crossed with Mme. Caroline Testout as pollen parent, and there resulted four fertile seeds from the cross, all of which germinated and grew. One, when it bloomed, produced a flower similar to La France in color, but with so many petals that it did not properly open, wherefore it was discarded. Of the other three seedlings, one has been named Christine Wright, another Columbia, and the third Purity."

It will be noted that nothing has been said concerning "sports." The survey which the Editor of the Rose Annual is endeavoring to make relates entirely to roses actually hybridized. A certain degree of discrimination is of course required in order to determine the value of a sport; yet sports are just

what the name implies, and not the result of painstaking and long-continued cross-fertilization and selection; wherefore they are not here discussed.

The list beginning on page 124 includes all the roses of American hybridization now in commerce concerning which authoritative information could be obtained. In most cases this information has been obtained from the grower himself. There are undoubtedly others of which details have not been obtainable; and many have been introduced without adequate trial, promptly falling out of commerce in consequence.

It is especially requested by the Editor that information be sent him as to errors or omissions, in each case giving name, class, year of introduction, and a brief description.

"Gurney" Hill's Rose Half-Century

By THE EDITOR

THE rose tourist abroad who announces himself to one of the rose-masters of Great Britain, France, or Germany as an American will always be considered in relation to his acquaintance with the best-known American rosarian—E. G. Hill, of Richmond, Ind. He it is who has, in his long half-century of clean and fine work with the queen of flowers, most definitely impressed himself and his productions upon the acute growers abroad.

Born in England in 1847, his plant-loving father brought the boy to Geneva, N. Y., in 1851, where, after the brief schooldays of those times were over, he was employed by the then notable nursery firm of T. C. Maxwell & Bro., who were leaders in outdoor-grown roses. Naturally "Gurney" Hill became familiar with all the best sorts then in commerce. In 1865 his father came to Richmond, Ind., and in 1881 he and his son began a general florist's catalogue business, from which developed the extensive business of today.

The foreign rose lists of those days have been preserved in Mr. Hill's office. All the novelties were collected and offered by Eugene Verdier, of Paris. The offerings for 1886-1887, at 200 francs per 100, included 75 current introductions, of which

alone Dr. Grill and Mme. Schwaller survive in a few catalogues of today. The next year the only rose presented that is yet in trade was Mme. Hoste. In 1888-1889, the United States entered: for of the two survivors, both very much alive today—Clothilde Soupert and Maman Cochet—it is announced that the latter “has been sold to Mr. Ernest Asmus of the Etats-Unis.”

Caroline Testout remains of the vintage of 1890-1891. The second year following came Turner's Crimson Rambler, and Mr. Hill risked \$200 on this novelty, receiving the first shipment that came to the United States. It was in immediate demand here, and great was the perplexity of the propagators when it was found to be a very different proposition in propagating from the familiar *Polyanthas*!

An insistent demand always creates a supply, and it was about this time, full twenty-five years ago, that “Gurney” Hill fostered the introduction of the earlier Hybrid Tea roses, so much desired for cut-flower needs as well as for outdoor bloom, by buying and testing all the many foreign productions. It was thankless and expensive work; but it had one merit—it turned the mind of this able rosarian to the production of better varieties.

Only those who have watched the work of such men realize the care, the expense, and the time required to conduct rose-breeding with success. As Miss Hill—the interested sister of “Gurney” Hill—has well said, it is “a still more expensive undertaking than testing European novelties, for these were at least up with the average rose, while the seedlings require not less than three years' trial. The first test merely sorts out the singles and the defective roses, after which comes the ‘watchful waiting’ required to separate those good enough for rigid trial in the best part of a forcing-house.”

Mr. Hill's standards were high, and it was not until 1904 that two roses resulted which he believed were superior. These were General MacArthur and Mrs. Theodore Roosevelt, both yet very much “on the map.” The famous Richmond was sent out in 1905 as the best amongst an unprecedentedly large production of red seedlings. It was seeded from Lady Battersea, and had Liberty blood in its petals. An international honor came

in the Paris gold medal for Rhea Reid in 1908, as tested in the Bagatelle Gardens.

Not only has Mr. Hill been able to produce winners—he has picked them as well, through his close relations with the great European growers, whom he has visited constantly. Thus he has introduced to the men who grow them to profit as great cut-flower roses, Mrs. Aaron Ward, the giant Sunburst, and the favorite of today, Ophelia. Last year he joined with F. Dorner & Sons Co. in sending forth Hoosier Beauty in competition with his own Richmond—let the fittest survive!

Nearly threescore and ten, Mr. Hill's rose ability is keener than ever, and his vision clearer. Writes Miss Hill: "No rose is as yet perfect as measured by the arbitrary demands of the forcer, and for this reason the rose-breeder's work is not done. There are several Americans who are working persistently for a nearer approach to the ideal. This may be said to include beauty of foliage and flower with freedom of bloom, stiffness of stem and perfection of habit, combined with the power to put money into the hands of every man who gives the rose room on his benches!"

Now notice what Mr. Hill, this veteran of a half-century's efforts, failures, successes, has for the immediate future: "Sixty seedlings, selected from something like 5,000, are now being grafted to furnish a test for the coming season. Visiting florists have been surprised and delighted with the novel combinations of color, the size and the freedom of growth, of many of them."

And then appears the humanity and the philosophy of this real benefactor, of whom his observing sister says: "The pleasure these seedlings afford their raiser is beyond measure; but, every seedling is a 'gamble' until it may be finally landed in the 'standard variety' column."

Long may "Gurney" Hill have pleasure in the rose creations which do him such great credit!



European Rose-Gardens and the Great War

By ROBERT PYLE, West Grove, Pa.

EDITOR'S NOTE.—Because Mr. Pyle has represented The American Rose Society abroad, and has therefore had personal touch with the great foreign rosarians, he has been asked to set forth the present situation.

ENGLAND, Ireland, France, and Germany, and let us not forget the little Grand Duchy of Luxemburg—all of them, have been affected by war conditions, and we of America are solicitous for the welfare of our brother rose-men.

Happily, we are informed, the noteworthy continental rose-gardens and principal rose-nurseries are not in the war-swept area. The rose magazines of both Germany and France come to us with surprising regularity, and make but little mention of warlike things. An invitation to act as judge at the Bagatelle Rose-Garden in Paris came again this past summer, as usual, and the trials of roses from allied or communicating nations have proceeded apparently much as before.

It is to our fellow nurserymen and growers in the war-ridden countries that our hearts go out in deepest sympathy. A personal letter from Germany tells us that "if the war continues there will be no young men left to run the nurseries." Most of the regular establishments are being maintained, but with obviously lessened amount of business. Do we Americans realize that every lover of roses is a loser when Mons. J. Perret, of Lyons, for example, loses his sons at the front?

In the lessened production of new varieties we rose-lovers in America will probably most feel the effects of this war. Therefore, and as never before, it behooves us to encourage in every possible way the American hybridizer to fill in the gaps thus made in the international ranks.

Interesting is the decision on the part of eminent rose-men in France, to discard all German roses and German names from their gardens. Mr. Mock, of Holland, however, is my authority for believing the French Rose Society will not do so.

With others we pray for a cessation of hostilities. I append extracts from personal letters that I am given liberty to publish.

From Ireland:

"Owing to this terrible war, trade among rose-growers has got a terrible knock. I refer more particularly to last year's business, as trade this year is more than doubly better than last year, and so far, we have been busy.

"Yet the outlook is not good, for several reasons. There is certain to be a restricted sale both in France and Germany, and also in Dutch-grown stuff. I understand that most of the big growers in this country planted from a half to a third less stocks last year, and in all probability will do the same this year, so that there is bound to be a shortage of roses if there is anything like half-normal trade. It is hard to know what to do.

"We are short-handed by over twenty of our men having gone to the war, and are struggling against many difficulties."

Another noted Irish rose-grower writes:

"The immense call on the manhood of the various nations at war has an immediate effect on the growers in the scarcity of labor, as it is an essential that the best of the manhood of the nation is the first called on. I think it would be safe to assert that in no case is there an individual firm which has not felt keenly the pinch of war, either in the loss of sons, husbands or workers; and in many cases the loss is deplorable. As an example, our mutual friend, the greatest of French rose-growers, Mons. J. Pernet, has lost his only sons, young men in the prime of their manhood and of great promise. Mons. Claude Pernet, to whom I was indebted for many kindnesses, was well known to rose-lovers on this side, and had endeared himself by his modest demeanor and his perfect command of English.

"The great financial demands on the Allies have also necessarily very much curtailed the purchasing ability of the public, and in a business such as ours, which is mainly a luxury, the effect of the inevitable retrenchment has been felt most keenly, and as an inevitable result we have had a slaughter of prices which is at once serious and reactionary. The limit has, however, been reached in this connection. As the price of labor increases and buying capacity diminishes, production must of necessity decrease also, and I believe that next year not one-twentieth as many roses will be available for sale. Almost all the growers of whom I have heard are curtailing their production to an enormous extent."

From Germany:

"Our nursery trade is going slowly now because of the war, but all other branches have plenty to do and gain money."

From England:

"Fortunately the area in France in the occupation of the enemy is not that which comprises the most important horticultural establishments, and from what I can gather the rose nurseries at Lyons, Orleans, Paris, and elsewhere are being conducted as usual, although of course with a much smaller volume of trade. The trials of new roses at Bagatelle were held as usual last June, and invitations have been sent out to send novelties for the trials to be held next June.

"As regards this country, the demand for roses continues good; in fact, I believe quite as many are being sold as in ordinary times, although prices are a good deal cut, and labor is scarce and dear. The demand for rose flowers during the past spring and summer was good, and the market growers appear to have done well. Our leading rose shows have been held as usual, and showed little falling off either in extent or in attendance."

The Enemies of the Rose

EDITOR'S INTRODUCTION

A careful survey of American writings relating to roses, as well as of the wide range of catalogues offering them for sale, has convinced the Editor that there has been issued so far no available body of definite scientific information upon rose troubles. In England, much more attention has been paid to the subject, and the National Rose Society supplies to its members a neat little volume, of ninety-seven pages in the 1910 edition, entitled "The Enemies of the Rose." This information, however, does not wholly apply to American conditions; and it is apparent to a reader of English rose literature that our British brethren need as much as we do a proper study of diseases in particular.

Bailey's "Standard Cyclopedia of Horticulture," in its second volume (1914), on page 1033, lists but two diseases of roses, one of which is the familiar and controllable powdery mildew. The same authority lists seven insects as attacking roses. It is notable that the papers in this Annual recognize and describe eleven rose diseases and fourteen rose insects.

It was, therefore, with the idea of providing rose-growers with all available information and facilities for rose-protection that various letters were addressed to pathologists (dealing with diseases) and to entomologists (dealing with insects). The replies, especially in respect to rose diseases, were astonishing; and it was in hope of bringing to light the need for a careful study of these diseases, which cost a great deal both in money lost and in pleasure prevented, that Prof. H. H. Whetzel, a noted plant pathologist, was asked to state the situation in his own way for The American Rose Annual.

It will be noted that Prof. Whetzel proffers the aid of his great department, and asks to have diseased rose material submitted to him for study. A similar proffer of aid to rose-growers has been made by the well-equipped floricultural department of the University of Illinois (the professor of pathology in which writes, "We would be extremely grateful to receive diseased material"), by the interested and capable botanists of the Pennsylvania State College, and of the Ohio Agricultural Experiment Station, and also by the Bureau of Plant Industry of the United States Department of Agriculture. It is most desirable that rose-growers generally by inquiry bring about interest and inquiry in other institutions having plant pathologists.

The response as to insects attacking roses showed a far better understanding of the situation. It is believed that the following paper on "Rose Insects and their Control," by Professors Crosby and Leonard, is the most complete study of these pests yet made in America, and it is referred to rose-growers with confidence.

For information concerning unrecognized rose diseases, inquire—always with carefully packed specimens and with as full details as possible, of either of the following: Prof. H. H. Whetzel, Plant Pathologist, Cornell University, Ithaca, N. Y.; Prof. Geo. L. Peltier, Floricultural Pathologist, University of Illinois, Urbana, Ill.; Dr. Frank D. Kern, Botanist, State College, Pa.; Prof. A. D. Selby, Botanist, Agricultural Experiment Station, Wooster, Ohio; Mrs. Flora W. Patterson, Plant Pathologist, Bureau of Plant Industry, Department of Agriculture, Washington, D. C.

The Diseases of Roses

By H. H. WHETZEL, Professor of Plant Pathology
Cornell University, Ithaca, N. Y.

WHEN the plant pathologist receives a diseased apple or a diseased potato, with a request for diagnosis and recommendations for control of the disease, he may turn with confidence to a great body of facts and experiments to assist his experience and judgment on the problem. Extensive bulletins dealing with the diseases of these two common crops are on his shelves. Text-books and monographic studies are at hand. Each number of his professional journal brings new data in regard to them. He can with some confidence advise his correspondent as to the true nature of the malady and give him in most cases accurate and practical advice as to methods of control.

What is the situation of the same pathologist when there comes to hand a package of diseased roses? He may recognize in the specimen before him one of the two or three most common diseases of the rose. More likely it will be a disease obscure and unknown. No extensive or up-to-date book or bulletin dealing with rose diseases is at his disposal. None of his colleagues are studying rose diseases, though dozens of them are devoting all their time and energy to the investigation of both the common and also the most obscure maladies of potatoes and of apples. Search as he may, but a page or two at most is to be found here and there on rose diseases; most of it out of date or inconsequential. He is able to give the inquiring rose-grower little more than the name of even the most common rose diseases, a very general and often imperfect idea of the nature and life habits of the pathogen, with suggestions as to "probable means of control."

The facts and experimental data requisite to a clear and profitable discussion of rose diseases do not at present exist in phytopathological literature. There is, so far as the writer is aware, but one book on the diseases of roses, a booklet rather, of about fifty-nine pages, and these include the insect pests as well as the diseases. The book, moreover, is in the German

language. It was published in 1910 under the title "Rosenkrankheiten und Rosenfeinde" ("Rose Diseases and Rose Enemies"), by Laubert and Schwarz. The treatment of the subject matter is academic rather than practical or professional. It is, therefore, hardly to be recommended to the rose-grower, nor is it of especial help to the plant pathologist. It merely emphasizes our lack of knowledge in respect to those facts which must be discovered before rational and practical methods of control can be suggested.

With this situation clearly before him the writer has accepted the very urgent invitation of the Editor to prepare something on the subject of rose diseases for this year's Annual. In the light of what has already been said it must be evident that little of real value to the grower can be written. It seems best to attempt this year little more than a list of the more common of these diseases, with a few notes on each as to their symptoms, cause, and their control in the few cases where something definite appears to be known. The writer hopes to accomplish with this article two things; first, to arouse the interest of the growers of roses in the numerous diseases which annually destroy or disfigure a considerable percentage of the crop, often affecting the most prized varieties; and second, as a result of an aroused interest on the part of the growers as to their needs and desires, to stimulate in himself, as well as his colleagues over the country, new and careful researches into the different diseases of this, man's oldest and most widely cherished ornamental.

A LIST OF ROSE DISEASES

THE POWDERY MILDEW, a disease caused by the fungus *Sphaerotheca pannosa*, known by the powdery white growth on the leaves and shoots becoming felty in autumn on the canes about the thorns. Especially common on Ramblers. Dusting with sulfur is most commonly suggested as a means of control.

ROSE RUST, caused by the fungus *Phragmidium* (several species). Appearing in early spring as yellow powdery pustules, often quite large, on leaves, young shoots, and buds. Toward autumn, black pustules on the underside of the leaves and on the stems break forth. The stems of some varieties of roses

are often killed to the ground by the black stage of this disease. Fortunately but few cultivated varieties appear to suffer. Destruction of all diseased canes is the only control measure that may now be suggested.

BLACK SPOT, caused by the fungus *Diplocarpon rosæ* (more commonly known as *Actinonema rosæ*). Known by the black spots appearing on the upper surface of the leaf. The disease causes premature defoliation, both under glass and in the open. No very satisfactory method of control appears to have been demonstrated.

STEM CANKER, caused by the fungus *Coniothyrium wernsdorfiæ* (probably the same as *C. fuckelii*). Cankers on the canes and branches. The lesions show a brown center with black border, outside of which is a reddish band or zone. Careful cutting and burning of all diseased canes is suggested. The disease also attacks apple twigs as well as roses in America.

THE BUD-ROT, caused by the fungus *Botrytis* (species undetermined). Very destructive to certain varieties during rainy seasons. Affects the buds just as they are about to open; the outer petals turn brown, the buds fail to open. No method of control is known.

THE DOWNY MILDEW, caused by the fungus *Peronospora sparsa*. Particularly a disease of roses grown under glass. Rare, but known in many countries. Sometimes very destructive. Appears as a blighting and rapid killing of young leaves. Dusting with sulfur is held to be effective against this disease.

SEPTORIA LEAF-SPOTS, caused by fungi of the genus *Septoria* (*Septoria rosarum*, *Septoria rosæ sinensis*, *Septoria rosæ*, etc.), characterized by distinct dead spots in the leaf. Center of spots white or pale flecked with minute black pimples, the fruit-bodies of the pathogen.

CROWN-OR ROOT-GALL, a bacterial disease caused by *Bacillus tumefaciens*. This is the common crown-gall of the nursery, affecting many woody plants, trees, and shrubs as well as several herbaceous plants. Often quite severe and destructive to roses in the benches. Removal or sterilization of the soil by steam, and thorough disinfection of the benches, etc., is the only thing to be suggested.

LEAF-SPOT, a fungous disease caused by *Mycosphaerella*

rosigena. Affects Hybrid Tea roses in the greenhouse. Appears first as reddish or purplish blotches on the leaves. These later develop into sharply defined spots with purple border and dead brown centers. Center dotted with the black pimple-like fruit-bodies of the fungus. No means of control suggested.

BRIER SCAB, caused by the fungus *Botryosphaeria diplocladia*. Often epidemic on the canes of certain varieties. Common on wild roses in England. Occurs in America. Known by the small black cankers on the canes. Cutting and burning of diseased bushes probably the best means of control.

Root-Rot, caused by the pore fungus *Fomes ribes*. Affecting the roots and base of the canes of gooseberry and currants as well as roses. Known by the brown shelf-like fruit bodies of the pathogen. Destruction of diseased plants is suggested.

There are perhaps as many more reported diseases of roses, chiefly leaf-spots, about which little more than the names of the pathogens are known.

The diseases of roses offer a most interesting and profitable field for study and investigation. It is hoped that the growers of roses will interest themselves to the extent at least of sending to the writer, specimens of their roses which appear to them to show disease. We will undertake to identify these and advise so far as our knowledge will permit as to probable means of control. Your assistance and coöperation are solicited to the end that a more extensive and better knowledge of rose diseases may gradually be built up. It is to your interest to push this matter.

Are your roses in trouble from some disease you do not recognize? Send twigs of the damaged roses, so packed as to keep them from withering, to any of the plant pathologists mentioned on page 52, writing careful details of what you have observed. You will be helping others as well as yourself.

Rose Insects and Their Control

By C. R. CROSBY and M. D. LEONARD
of Cornell University

THE ROSE APHIS (*Macrosiphum rosæ* Linnæus).—One of the most troublesome insects attacking the rose is a small green or pinkish plant louse (Fig. 1). This rose aphid is widely distributed throughout the whole United States and Canada and also occurs in Europe. It infests roses both in the open and in the greenhouse. In the colder parts of the country the plant lice pass the winter in the form of small black shining oval eggs which are attached to the bark near the buds. In the South, where the winters are mild, no eggs are deposited and breeding continues throughout the year. The winter-eggs hatch with the opening of the buds in the spring and the young lice become mature in from ten days to two weeks. They are all females and begin to give birth to living young at the rate of about four to six a day. Each female is capable of producing from thirty to forty-five young in the course of her life. On an average, about twenty-five days is required for each generation, and the number of generations a year depends upon the length of the growing season. The great majority of the lice are wingless, but occasionally winged forms are produced. The latter are able to fly to other plants less badly infested and there find more abundant food for their offspring. The mature plant louse is about one-twelfth inch in length, varying in color from green to pinkish. In the winged forms the thorax and sides of the abdomen are spotted with black. The antennæ, cornicles and tips of femora are also black.

The lice reproduce with great rapidity and soon cover all the tender parts of the plant. They cluster in great numbers on the tender tips and on the unopened buds. They feed by sucking out the plant juices through the tube formed by the slender bristles of the beak. The tips of the branches are often stunted

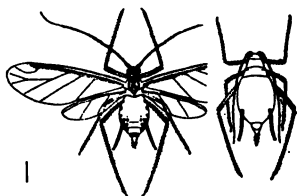


FIG. 1. The rose aphid (*Macrosiphum rosæ*): Winged and apterous females. (After Essig.) Enlarged.

and the infested buds either fail to open entirely or produce only deformed and imperfect flowers.

Control.—Many of the lice may be dislodged with a stiff stream of water from the garden hose. In many cases this is the most practicable way of controlling the pest, especially in small gardens. Good results may also be obtained by using nicotine sulphate (containing 40 per cent nicotine) at the rate of one part in eight hundred parts of water, to which should be added a small amount of soap to make the liquid stick and spread better. Where only a small quantity is needed, put one teaspoonful of the nicotine sulphate in two gallons of water, adding about one ounce of soap. Either whale-oil soap or common laundry soap may be used. If the nicotine preparation is not at hand, whale-oil soap or any other good soap, in the proportion of one pound in eight to ten gallons of water, may be used. The spraying should be done with great thoroughness, care being taken to wet all the lice. As it is a difficult matter to wet those on the buds and the tips of the branches, it is a good plan to dip the tips into a dish containing a quantity of the liquid. The aphid may be killed indoors by fumigation with tobacco. Care should be taken not to injure the more tender plants.

THE SMALL GREEN ROSE APHID (*Myzus rosarum* Walker).—Roses are often infested by this small green plant louse. It is a more serious pest in greenhouses than where the plants are grown in the open. In many parts of California it is the most serious insect with which rose-growers have to contend. It may be distinguished from the species last treated by the fact that it is only about one-half as large, and that all the individuals are green—there is no reddish form.

Control.—This small green rose aphid injures plants as does the larger species. Control it by the same means.

There are in the eastern United States three common species of sawflies, the larvæ of which feed on rose foliage.

THE THREE ROSE SLUGS

THE AMERICAN ROSE SLUG (*Endelomyia rosæ* Harris).—This rose slug is a native American insect and is widely distributed throughout the eastern United States, but is more abun-

dant in the northern part of its range. The parent four-winged flies (Fig. 2) are deep shining black in color and about one-fifth inch in length. They appear on the rose bushes soon after the leaves open and may be found until the bushes are in full leaf. The female is provided with a sharp ovipositor with which she inserts her eggs into the tissue of the leaf between the upper and lower epidermis. The eggs hatch in ten days to two weeks, and the young slugs feed mostly at night, skeletonizing the upper surface of the leaves. The slugs are at first greenish, but later become opaque yellowish. They become full grown in two or three weeks.

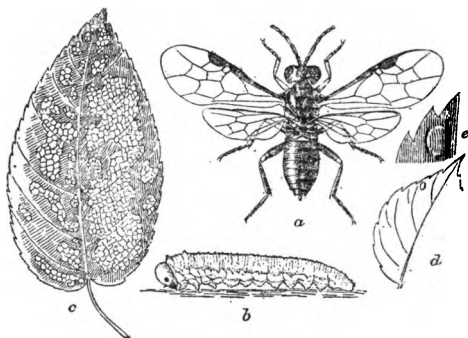


FIG. 2. The American rose slug (*Endelomyia rose*): a, adult sawfly; b, mature larva; c, work of larva on rose leaf; d, section of rose leaf showing location of egg near upper margin; e, egg in situ on bit of rose leaf. (After Chittenden.)

When mature the slug descends to the ground and there at the depth of an inch or more constructs a fragile cocoon within which the winter is passed. There is only one brood annually.

THE BRISTLY ROSE SLUG (*Cladius pectinicornis* Fourcroy).—This enemy of the rose was introduced into the United States from Europe nearly half a century ago. It is now widely distributed throughout the eastern United States, but is more injurious southward. The parent insect is a four-winged fly, black in color and a little longer than the species previously mentioned. The flies appear about the time the roses are coming into leaf, and the female inserts her small, white, rounded eggs into the upper surface of the leaf petiole. The eggs hatch in seven to ten days. At first the slugs merely skeletonize the leaves, feeding on their upper surface, but when older they eat out large irregular holes in the edge of the leaf, often devouring all except the stronger ribs. When mature the larva is about three-fifths inch in length, yellowish or green in color, and the whole surface, especially at the sides, is more or less bristly.

The larvæ grow rapidly and soon complete their development. There are three generations annually in the North, and possibly four in the South. The cocoons of the summer generations are attached to the lower surface of the leaves or to twigs or nearby objects. The winter cocoons are made among fallen leaves about the base of the rose bushes.

THE COILED ROSE SLUG (*Emphytus cinctus* Linnæus).—This injurious sawfly was apparently introduced from Europe into Boston in the late eighties and is now well distributed throughout the northeastern United States. This sawfly can be distinguished from the two preceding by its larger size, and by having a wide band across the middle of the abdomen. The females appear soon after the leaves unfold and deposit their eggs singly on the under side of the leaves. The larvæ devour the entire substance of the leaves, feeding along the edge with the tip of the body coiled beneath it. The mature larva is about three-fourths inch in length; the upper surface is metallic green, spotted with white, and the lower surface and legs are grayish white. The head is yellowish orange with a black stripe in the middle. The first thoracic segment is blue and the last two are gray. When full grown, the slug deserts the leaves and bores into the pith of a dead rose branch or some other nearby plant where the pupal stage is passed. There are two broods annually.

Methods of controlling rose slugs.—Although rose slugs are often troublesome, they can be controlled in several ways. A strong stream of water from the garden hose if applied every few days is very effective in ridding the bushes of these pests. The slugs may also be killed by application of arsenicals. For this purpose, arsenate of lead is preferable to paris green since it is less likely to burn the foliage. If applied too heavily, however, it leaves a whitish deposit on the leaves which is sometimes undesirable. It should be applied at the rate of two pounds in fifty gallons of water or bordeaux mixture (= one ounce to one and one-half gallons). Hellebore is also an effective insecticide, and may be used at the rate of one ounce in two or three gallons of water, or dusted on the foliage dry when diluted with double its weight of powdered plaster or cheap flour. Tobacco extract as recommended for the control of the rose aphid will also be found effective against the slugs.

THE ROSE LEAF-HOPPER (*Typhlocyba rosæ* Linnæus).—The leaves of rose bushes are often injured to a considerable extent by a small nearly white leaf-hopper which feeds on the under side of the leaves. The leaves become yellowish, due to the feeding punctures of the insect, and if the infestation is severe they often turn brown and die. The young leaf-hoppers hatch in the spring from eggs inserted in the bark on rose bushes and become mature in June and July. Most of them then migrate to other plants where a summer generation is produced.

Control.—The rose leaf-hopper may be controlled by spraying with tobacco extract as suggested for the control of rose aphid. Care should be taken in spraying to hit the under side of the leaves.

THE ROSE LEAF-ROLLER (*Archips rosaceana* Harris).—The rose leaf-roller is frequently found in greenhouses though it is not always sufficiently abundant to become a serious pest. It is widely distributed throughout the United States, and attacks roses both in greenhouses and out-of-doors. The black-headed olive-green caterpillars feed on the leaves and blossoms, which they roll and web together with fine silken threads. They become full grown in about a month and pupate within the rolled leaves. The light brownish moths with banded wings emerge in two or three weeks and deposit their eggs in masses on the leaves. On roses grown in the open there are two broods annually, and in the greenhouse the caterpillars become troublesome in the spring.

Control.—The rose leaf-roller may be controlled by thorough spraying with arsenate of lead, two pounds in fifty gallons of water (one ounce to one and one-half gallons), provided that the applications be made early, before the plants become so large as to make it difficult to cover all the foliage with the poison. Spraying should always be supplemented by hand-picking. Careful watch should be kept for any indication of injury, and when found the caterpillars should be crushed or destroyed in some other way.

THE ROSE CHAFER (*Macrodactylus subspinosus* Fabricius).—This well-known beetle, which is often a serious enemy of roses, is generally distributed throughout the eastern United

States. It is most troublesome in sandy regions, especially where waste grass lands abound. The adult beetle is about one-half inch in length, grayish brown in color, with long ungainly legs (Fig. 3). The beetles emerge from hibernation about the end of May or middle of June and feed in great numbers on the blossoms and leaves of rose bushes, often entirely destroying the bloom. After feeding for some time the female flies to nearby grass lands, burrows into the ground to the depth of 3 to 6 inches and there deposits her smooth white oval eggs about one-twenty-fifth inch in length singly in little pockets in the soil. The female normally oviposits three times, and about

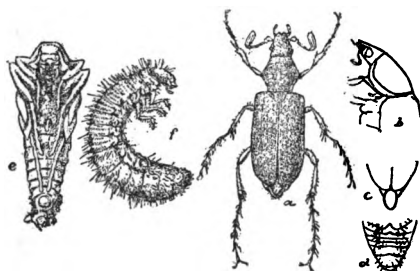


FIG. 3. The rose chafer (*Macrodactylus subspinosus*): a, female beetle; b, anterior part of male; c, pygidium of male; d, abdomen of male; e, larva; f, pupa. (After Riley.)

twelve eggs are laid at each oviposition. In New York most of the eggs are laid during the last week in June and the first half of July. Sandy soils are selected for oviposition; the heavier soils are rarely infested. The eggs hatch in two to three weeks. At first the grubs feed on decaying vegetable matter but

later they attack the roots of grasses. By November the larvæ become mature. At this time they resemble the common white grub, but are only about four-fifths inch in length. When full grown they descend to the depth of about a foot and spend the winter curled up in oval earthen cells. In the spring they come nearer the surface and may resume feeding for a short time. In New York most of the grubs transform about the last of May or first of June to pupæ in earthen cells 3 to 6 inches beneath the surface. The beetles emerge three or four weeks later and fly to vineyards, rose-gardens or other places where they can find suitable food.

Control.—This insect is a difficult pest to control. Apparently the beetles do not relish foliage which has been coated with arsenate of lead alone. If, however, cheap molasses or glucose is mixed with the poison the beetles will eat it readily

and many are killed within twenty-four hours. When the beetles are very abundant, however, much damage will be done before they succumb to the effects of the poison. Hand-picking the beetles into pans containing a little kerosene will greatly reduce their numbers. This must be repeated at short intervals as long as the beetles continue to invade the rose-garden. If the beetles are very abundant on choice plants, screens made of mosquito netting will give effective protection.

THE ROSE MIDGE (*Neocerata rhodophaga* Coquillett).—This midge has been especially injurious to roses grown in greenhouses in Chicago and northern Illinois and to roses grown in the open in New York. In some localities it has been found to be one of the worst pests with which the rose-grower has to contend. At one time the growing of Meteor and La France roses in certain Chicago greenhouses was almost discontinued, due to the attacks of this insect. American Beauties and Hybrid Tea roses are said to be the first attacked, and the most susceptible to injury.

The adult is a small yellowish midge-like fly about one-twenty-fifth inch in length. The females deposit their minute yellowish elongate eggs beneath the sepals of the flower-buds or between the folded leaves of the leaf-buds. The eggs hatch in about two days and the young maggots develop rapidly within the buds, feeding upon the juices and tender tissues of the undeveloped leaves and flowers. Early in the season, when the maggots are not so numerous, the buds are not killed outright, but are able to open, although the leaves and blossoms are more or less deformed. Later in the season the maggots are more numerous, and the buds are so severely injured by their presence that many of them fail to open at all. The young buds become brown and shriveled, due to the attacks of the maggots. The mature maggot is about one-fourteenth inch in length and whitish in color or often tinged with reddish. The larvæ become full grown in five to seven days and drop to the ground where, slightly below the surface, they pupate, and in about eight days emerge as adult flies. In summer, therefore, the total life cycle is completed in about two weeks. The maggots are present in injurious numbers from June to October or November, but are, as a rule, most troublesome during June

and July. The winter is probably passed in the pupal stage in the greenhouse soil.

Control.—Once the rose midge has become established in a greenhouse it is a very difficult pest to eradicate. Since the rose is the only plant attacked by this insect, if the infested range be planted for a year to some other crop, such as carnations, the house may be used again for roses the following year without danger of reinfestation, provided of course clean plants are used. If it seems undesirable to rotate, the house should be thoroughly cleansed in midwinter. During December and January, when the pupæ are in the soil, all the plants should be removed and destroyed. The soil also should be carried outside the greenhouse. As a further precaution, the rubbish beneath the benches should be removed and the floors of the benches thoroughly sprayed with some insecticide such as a 20 per cent kerosene emulsion. This method has a decided disadvantage, however, since the winter crops are the most valuable. Although the above operations are expensive of time and labor, nevertheless they will undoubtedly pay when a greenhouse has become infested with this pest. Fumigation with hydrocyanic acid gas may be of benefit when used early in March to kill the emerging flies of the first generation, and while the growth of the maggots is still slow. During the summer this treatment is not so effective, as the gas cannot be used oftener than every two or three days without damage to the plants, and in these intervals many of the flies will have an opportunity to emerge and deposit eggs. The gas is not sufficient to kill the maggots which are well protected within the buds unless used at such a strength that injury to the plants will result. In addition to fumigation, the plants should be gone over every day and the infested buds cut off and burned. No method of controlling these insects in the open has been devised.

THE ROSE SCALE (*Aulacaspis rosæ* Bouché).—This scale insect occurs wherever roses are grown. The larger female scales are about one-tenth inch in diameter, snow-white in color, nearly circular, with the two yellow cast skins at the margin. The male scales are also white but shorter and narrower with three longitudinal ribs. The scales are more abundant in damp situations. Rose bushes are sometimes so badly infested

that the stems have the appearance of being whitewashed. In such cases the plants are weakened, growth is retarded and the flowers are prevented from attaining their full size and beauty. The rose scale apparently hibernates in all stages from egg to adult. After April breeding is almost continuous. There are at least two broods annually and three may occur in New Jersey and southward.

Control.—A thorough application of lime-sulphur solution at the rate of one gallon of the commercial preparation testing 32° Baume in eight gallons of water, applied in the winter or early spring, will be found effective in controlling this scale. In addition to the above treatment it may be advisable, in some cases, to cut off and burn the worst infested stems.

THE ROSE CURCULIO (*Rhynchites bicolor* Fabricius).—This bright red snout-beetle (Fig. 4) with black legs and snout, about one-fourth inch in length, is widely distributed throughout the United States. In the northern states the beetles appear on the rose bushes early in June. In feeding, the beetle eats holes with its beak into the unopened buds and fruit and also punctures the flower-stems. The leaves are also attacked. Some of the injured buds fail to open, while those that do expand often have the petals riddled with holes. The light yellowish white, oval eggs are deposited in holes made in the buds and young fruits.

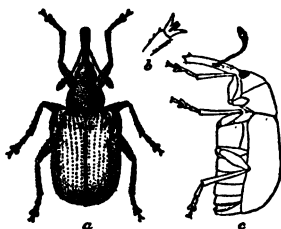


FIG. 4. The rose curculio (*Rhynchites bicolor*): a, female beetle; b, claw; c, female in outline from side; a, c, enlarged; b, more enlarged. (After Chittenden.)

They hatch in a week or ten days and the white legless grubs feed on the seeds until full grown. In late summer the full-grown larvæ desert the fruits and descend to the ground where they soon change to pupæ and hibernate in this condition. There is but one brood annually.

Control.—In the flower-garden, persistent hand-picking the beetles into a pan containing a little kerosene oil will be found an efficient and practical means of control. In larger plantings it may sometimes be found necessary to resort to arsenical sprays. Arsenate of lead, two pounds in fifty gallons of water (one ounce to one and one-half gallons) should be applied at the

first appearance of the beetles. As the beetles breed to a great extent in wild roses, much damage may be avoided by destroying the wild roses in the vicinity of the garden.

THE ROSE SLUG-CATERPILLAR (*Euclea indetermina* Boisduval).—In recent years, roses in the southern states have often been injured to a slight extent by a caterpillar of striking appear-

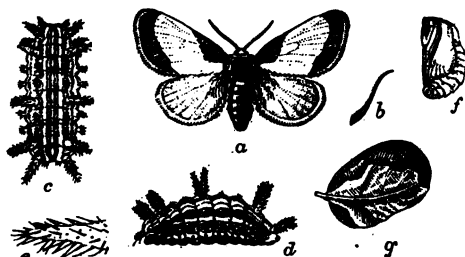


FIG. 5. The rose slug-caterpillar (*Euclea indetermina*): a, female moth; b, male antenna; c, larva, dorsal view; d, larva, lateral view; e, spine of larva, much enlarged; f, pupa; g, cocoon. (After Chittenden.)

ance, orange in color and covered with tufts of spines (Fig. 5). The eggs from which these caterpillars hatch are laid in July, singly or in small groups, slightly overlapping each other. They hatch in about nine days, and the young caterpillars feed on the leaves,

remaining on the under side. Toward the middle of September the caterpillars become full grown. They are then about three-fourths inch in length. The caterpillar hibernates in a rounded chocolate-colored cocoon which is formed on the ground among loose rubbish. The moths emerge the following July. The moth has a wing-expanse of about one inch. The fore-wings are a dark cinnamon-brown crossed diagonally by a wide band of green. The hind-wings and abdomen are pale brown, the thorax like green plush.

Control.—If but a few bushes are attacked, hand-picking the caterpillars will control this insect. Care should be taken, however, to wear a glove during this process. An irritating fluid is secreted at the base of the spines. When the caterpillars are handled the tips of these spines are broken off and enter the skin, causing a painful irritation. If a large number of bushes are attacked, the caterpillars may be killed when young by a thorough application of arsenate of lead, two pounds in fifty gallons of water, or one ounce to one and a half gallons.

FULLER'S ROSE BEETLE (*Aramigus fulleri* Horn).—This beetle is a well-known and destructive greenhouse pest which

often attacks roses. The adult is a small grayish brown snout-beetle (Fig. 6) about one-half inch in length, which feeds upon the foliage. The eggs are deposited in masses on the stems just above the ground or upon the soil near the base of the plant. These hatch in about a month, and the small white grubs, about one-third inch in length, burrow into the soil and feed upon the roots of the plant. It is in this stage that the greatest injury is inflicted.

Control.—The beetles are very resistant to fumigation with hydrocyanic acid gas and to arsenicals. Persistent hand-picking will tend to hold them in check and they should not be allowed to gain a foothold in the greenhouse. They often congregate upon the plants in the late fall, and this is a good time to destroy them.

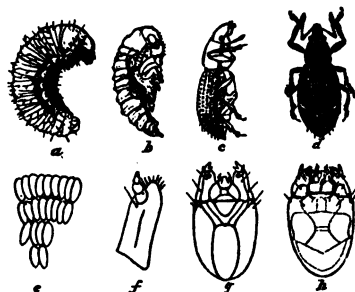


FIG. 6. Fuller's rose beetle (*Aramigus fulleri*): a, larva; b, pupa; c, beetle, outline side view; d, same, dorsal view; e, eggs enlarged; f, left maxilla with palpus; g, lower side of head of larva; h, upper side of same enlarged. (After Riley.)

THE ROSE-SEED CHALCIS-FLIES (*Megastigmus aculeatus* Swederus, and *M. nigrovariegatus* Ashmead).—During the summer one may often see a small brownish, winged insect resting on the rose fruits. Close observation will often show that the female has her small slender ovipositor inserted nearly its full length into the fruit. She is depositing her eggs within the unripe seeds. These eggs hatch into tiny grubs that devour the kernel of the seed and the following spring the adult flies emerge from the seeds and leave the fruit through small round holes in the sides. These insects are not injurious but are often objects of curiosity and interest.

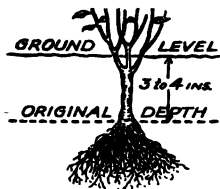


Planting and Pruning Field-Grown Roses

(Adapted from a letter written by C. D. BEADLE, of Biltmore, N. C.)

So few, outside of professional ranks, secure uniformly satisfactory results from budded roses, such as the average commercial Hybrid Perpetual, that we constantly urge our friends to plant roses 3 or 4 inches deeper than they grew in the nursery; and to insure such deep planting we have been in the habit of illustrating our correspondence thus:

Even with roses on their own roots, when planted in trying climates or under difficult conditions of soil or exposure, we have found deep planting to add very materially to the hardiness or longevity of the plants. Of course my remarks refer to and deal with the usually larger, stronger and mostly field-grown type of roses, rather than with the little greenhouse roses.



The new style of pruning removes all of the wood which has borne blossoms in varieties like the Ramblers, Wichuraiana hybrids, etc. This aids to control mildew and reserves the forces of the plant for luxuriant development. The removal of the old wood should closely follow the end of the bloom.

With Hybrid Perpetuals, we try to advocate pruning heavier than is usual, so as to increase quality at the expense of quantity. Of course, the kind or class of rose must control the amount of cutting; for some kinds, like the Moss and Brier roses, need little pruning, while others, like Baby Rambler, the Teas, and the Hybrid Teas, seem to like no end of cutting back.

Ideal budded roses, chiefly Hybrid Perpetuals, are grown on disbudded stocks, i. e., Manetti or Cinnamon stocks that have been made "blind" by cutting out the eyes from the lower portion of the cuttings from which they are grown. Ramblers, Wichuraiana hybrids, and the like, are best grown upon their own roots; they root easily, and form strong root-systems. We also like Teas and Hybrid Teas on their own roots, but some varieties are improved by budding upon more vigorous roots.

The Rose All Over America

EDITOR'S INTRODUCTION

In his fascinating "Story of the Modern Rose," as printed in "The Garden Magazine" for June, 1915, Mr. E. H.— or "Chinese"—Wilson says: "The rose is the one flower whose name is common to the polyglot people of this land. In English, French, German, Danish, and Norwegian its name is Rose; in Italian, Spanish, Portuguese, Russian, and Latin it is Rosa; in Swedish it is Ros; in Dutch, Roos; in Bohemian, Ruse; in Hungarian, Rozsa; and in Greek, Rhodon . . . It is the national flower of one great race, but it is loved by all and is the monopoly of no one race nor creed."

There is no part of the United States and Canada in which the rose is not known and loved. It is indeed the universal plant, even now; and with improved varieties and greater knowledge, it will assuredly attain a higher place in the regard of all the people in America. To show the present vogue of the rose, effort has been made to here include some rose-word from the breadth and length of English-speaking North America.

Nothing that the American Rose Society has done is more fraught with possibilities for concrete civic good than the establishment of rose test-gardens. These naturally relate to municipal rose-gardens, and the latter may be said to begin the impressions that the test-gardens confirm. It is therefore with great pleasure and in anticipation of a notable advance in rose interest that there is here presented the story of both the municipal and the test-gardens now in progress.

The Rose-Garden in Elizabeth Park, Hartford, Conn.

By G. A. PARKER
Superintendent of Parks, Hartford

EDITOR'S NOTE.—Mr. Parker is the dean of American Park Superintendents, and his original thinking and high conception have led to vast usefulness of accomplishment, not only in Hartford, but in the many cities inspired by his work. He is a statistician and an economist as well, and he has a view of the rose that is original. It should be noted that the Hartford Rose-Garden was not only the first municipal rose-garden in America, but that there is maintained in connection with it, and under the supervision of the American Rose Society, the first and yet the best of the several rose-test gardens for which the Society stands.

THE ROSE-GARDEN was designed, constructed and planted in 1904 by Theodore Wirth, then the Park Superintendent, at a cost, as shown by reports, of \$2,682.96. Since then it has been maintained at a total cost, to November 1, 1915, of \$11,116.39. The annual cost at the present time, including

the perennial gardens surrounding it, is about \$1,500. The garden consists of 54,500 square feet, or $1\frac{1}{4}$ acres. The average cost for maintenance for the last ten years has been .019 cent per square foot; but since this garden was formed, the minimum wage for city employees has been increased to \$2 per day, and the maximum day reduced to eight hours, which, together with higher cost of material, has raised the yearly cost to about .025 cent per square foot.

The Rose-Garden has been, since its establishment, under the care successively of Peter Zuger, Alexander Cummings, Jr., and Edward Norberg, the latter being in charge at the present time. The design of the Garden has not been changed since Mr. Wirth's time, although the planting of some of the beds has. The nursery, which at one time surrounded it, has been changed into a lawn, with a large irregular perennial border planted just outside the limits of the Rose-Garden. There are 116 rose-beds, to which should be added the plantings of the arbors, the summer-house and the trellises. There are 300 different varieties of roses, and about 1,500 separate plants.

The number of visitors during 1914 was 116,000, by count and upon conservative estimate. The total number during the twelve years of its existence, as determined by adding the number estimated and counted each year, has been about 800,000. Assuming these numbers are reasonably correct, then the cost of the Rose-Garden per visitor, both for construction and maintenance, is .0173 cent. Measured by the acre, at the present time an acre of the Rose-Garden attracts about 85,000 people each year, or at the ratio of two persons per square foot of area. It is doubtful if any other single acre in the open of the Hartford Park System attracts so many persons to it.

While I can conceive of a park acre so located and developed as to attract and serve ten times that number, yet it is doubtful if it does occur, except in our largest cities under most favorable conditions, and then with special attractions, like a zoo, or by reason of special apparatus and buildings.

Such is a rough statement of what the Elizabeth Park Rose-Garden in Hartford is in substance. Now you ask, "What in my opinion is the effect and value of a municipal rose-garden to the people of the city?"

In my opinion, it is beneficial in several ways:

First, it helps make Hartford known very pleasantly to many people outside the city and state. It probably attracts 10,000 people from outside the state every year. On our two so-called "Rose Sundays" probably one-tenth of the automobiles have markers of other states than Connecticut, and mostly from Massachusetts. Quite a surprising number, however, come from distant states, for the rose season is also the commencement season for Yale College, and many automobile parties that go to that commencement visit the Rose-Garden before their return. As an advertisement, and for promoting good feeling toward our city, I think the Rose-Garden brings back a greater return in money to the city than is expended for its maintenance.

Second, it adds to the beauty and pleasure of many a private home; for many, many people come to the Rose-Garden not only for the pleasure while there, but take notes and purchase the roses that please them for their own homes. It is difficult to estimate to what extent the Rose-Garden has, in this important way, brought comfort, peace, rest and pleasure into private homes. I believe this to be of no small value to Hartford.

Third, it has increased greatly the sale of roses by nurserymen. Before this garden existed, the people used to order roses as red roses, or white, or yellow, or by some nondescript name. Now they order by name, and buy many more than formerly, and if they do not get what they want, by comparison with the plants in the Rose-Garden, they know it.

Fourth, and much greater than all other beneficial results, is the influence of the beauty of the roses upon the individual. What beauty is, and how it influences the individual, is a much-discussed question. There are many definitions of beauty, but none that satisfy all, because beauty is a fundamental force, and fundamental forces cannot be defined.

I have come to think of beauty as the love-letter of the Creator, through which He is wooing us unto Himself; for beauty is spiritual, and not physical.

A love-letter is a message, into which the sender puts a part of his very self, and the one who receives it, in some mysterious way weaves it into a part of his very life. It matters

little what words are used, or how the message is sent, providing it becomes a part of the sender and the receiver. Surely, the Creator uses a most beautiful form when He avails Himself of the roses to convey His message!

When this beauty is in great abundance and well displayed, as it is in a well-designed and properly maintained rose-garden, it is not surprising that thousands visit it; for thereby they are healed in spirit, like those who entered the pool after the waters were stirred by an angel. The Rose-Garden then tends toward the healing of the spirits of the people, as well as being a source of strength, courage and of pleasure. No money estimates can be put upon this value to the people.

It is true many people visit the Rose-Garden because other people do, for people go where the crowds are, finding their pleasure in the spirit of the crowds; and while those who commune with the roses may find a greater and more precious helpfulness, yet those whom the crowds attract are helped in a lesser degree, and also by the beautiful surroundings of Elizabeth Park.

The Cornell Rose Test-Garden

By DR. A. C. BEAL

THE establishment of public rose-gardens serves the exceedingly important purpose of demonstrating the uses and possibilities of the rose. Their situation in public parks of the large cities means easy accessibility to many thousands of persons annually; and while comparatively few of the throng of admirers may be cultivators of roses, nevertheless there are many indications that the circle of rose-lovers is much larger than this. It is true that many are drawn to these rose-gardens just as to any outdoor spectacle, so that the influence of these gardens cannot be measured by the attendance on a given day; yet it should be apparent to thinking persons that the success of any worthy cause depends quite as much on the attitude of the general public as upon the activity of its advocates.

Another group includes the rose test-gardens for testing all varieties of roses. In these gardens as much or more cultural skill is required, but the desire to test individual varieties is



PLATE VII. In the Elizabeth Park Rose-Garden, Hartford



paramount to that of producing landscape or garden effects. As some of the varieties will doubtless fail in greater or less degree, good pictorial effects with varieties of unknown merit may be more the result of good fortune than of design. This is not mentioned by way of apology, but to farther emphasize the differing fields of the two types of gardens, and to indicate that the two are not to be measured by the same standards. The rose-lover, because of the large collection of varieties grown under similar, or designedly different, methods of culture, will have presented to him in the test-garden an unfailing source of interest and inspiration, even though persons with only a casual interest may miss the spectacle produced by numbers of free-flowering varieties grown in large masses.

The test-garden should contain, at least, all of the best of the older varieties of roses to serve as standards of comparison in testing new varieties. When plants are received, a record should always be made of the variety, class, by whom sent, originator, stock or own root, size and condition of the plants, date of planting, etc.; for without such information no committee can fairly determine the merits of two or more roses when judged on any fixed date. In fact, the value of a rose is to be more accurately determined by its record week by week throughout the season. The effect of the weather conditions, the immunity or susceptibility to disease, the injury from insect or other pests should be made a part of the record of any variety.

It is well known that new varieties of roses under glass often do not show promise until their peculiar cultural requirements have become known and the methods altered accordingly. In like manner, though perhaps in less degree or with less possibility of control, it is conceivable that to vary the cultural methods with new varieties may bring out their merits.

Thus it will be seen that a mass of information concerning the culture and merits of varieties will be accumulated which should be of value to cultivators of roses. Naturally this information cannot be conveniently imparted to large numbers of the visitors, but must be printed and distributed. It is for this reason, as well as for the considerable amount of record-keeping involved, that the American Rose Society very wisely has established its chief test-gardens in coöperation with agen-

cies already established and publicly supported to carry on investigation work and to publish the results. The Cornell Rose-Garden, established by the American Rose Society in coöperation with the Department of Floriculture of Cornell University, is one of the gardens of the latter type.

The plan of this Garden was published in the 1915 Bulletin of the American Rose Society. During the season of 1915 the walks throughout the Garden were seeded, and with a favorable season the grass is in good condition and the appearance of the Garden next season will be much improved.

The climbing roses, growing on what may be considered a pergola on the plan, have been trained to cedar posts. These posts are 10 to 12 feet in length and set 3 feet in the ground. The side branches were left about 10 inches long so that the canes could be trained over the posts. Whether this will prove a satisfactory method cannot be determined until after several seasons have passed. This season the climbers set two years ago have made a good growth, most of them having reached or grown beyond the top of the posts. If the wood is sufficiently ripened, as it appears to be, and the plants prove hardy, the results should be satisfactory.

The number of climbers received has been so large that these rows have been extended to surround an additional area equal to that already platted. This area is being put into condition for planting, because the beds in the original garden are nearly all planted. The additional space will also be needed for future receipts, as well as for any cultural tests we may desire to undertake.

A 7-foot woven-wire fence with iron-pipe posts set in concrete has been constructed on three sides of the original Garden, and it is planned to surround the entire Garden with a similar fence. The climbing roses set along the fence made an equally strong growth.

The roses in the beds made a good growth, and most varieties planted a year ago gave a good show of bloom, although last winter was very severe upon the Hybrid Teas. Additional protection is to be given this winter which, it is hoped, will bring the plants through in better condition.

The Cornell Rose-Garden Committee (A. C. Beal, John

Watson, and Rev. E. M. Mills) and the President-elect of the American Rose Society met in Ithaca on June 24, when it was decided not to make any awards this year, but to await the visit of the Society in 1916, at which time the varieties planted last fall and spring should be in better condition to be judged. The Committee found much to commend in the condition of the Rose-Garden and thought that excellent progress had been made.

Among the varieties added this year are the following:

Abondant, Augustine Halem, Archduke Charles, Amelie de Greiff, Adelaide Mouille, Bianca, Baron Palm, Brenda, Bessie Brown, British Queen, Captain Christy, Clothilde Soupert, Cheshunt Hybrid, C. W. Cowan, Camoëns, Comte Julie, Duchess of Albany, Duchess of Sutherland, Evelyn Dautesey, Francis Scott Key, Florence Haswell Veitch, Gainsborough, George Arends, George Dickson, General-Superior Arnold Janssen, Gloire de Chédane-Guinoisseau, Georges Elger, Generalin Isenbart, H. Armytage Moore, Helena Gambier, H. F. Eilers, Herzogin Calabrien, Harry Kirk, Irish Beauty, Irish Harmony, Irish Modesty, King George V, Lady Dunleath, Lambert's No. 611, Lambert's No. 592, Leonie Lamesch, Lena, Lily Ito, Madame Charles Lutaud, Madame Maurice de Luze, Madame Eugene Marlitt, Madame Berthe Fontaine, Mainan Cochet, Manuel O. Azevedo, Marcella, Marie Jeanne, May Miller, Meteor, Mevrouw Dora van Tets, Mrs. A. E. Coxhead, Mrs. Andrew Carnegie, Mrs. Amy Hammond, Mrs. Charles Hunter, Mrs. Herbert Stevens, Mrs. Sam Ross, Mrs. F. W. Vanderbilt, Mrs. Herbert Hawksworth, Mrs. Walter Easlea, Mrs. Potter Palmer, Marie Brissonet, Madame Jules Gouchault, Mauve, Mrs. Dudley Cross, Molly Sharman-Crawford, Natalie Bottner, Nerissa, Oliva, Old Gold, Oscar Cordel, Perle des Blanches, Perfection des Blanches, President Kruger, Prinzessin Hildegard, Pius X, Pride of Washington, Psyche, Pernet's Triumph, Princess Bonnie, Queen Mary, Rosemary, Renee Wilmart Urban, Rhea Reid, Souv. de Catherine Guillot, Souv. de Pierre Notting, Spenser, Summer Queen, Superba, Tona, Willowmere, William R. Smith, Yvonne Rabier.

Later in the year Messrs. Kallen & Lunnemann, of Boskoop, Holland, nurserymen, sent to Ithaca the following list of roses raised in Holland, for test in this country:

Six each of the following: Augustus Hartmann, Mrs. Wemyss Quin, Toteto Gelos, Mrs. S. T. Wright, Danæ, Madame Colette Martinet, Edgar M. Burnett, Iona Herdman, Brilliant, Mrs. Archie Gray, Grete Schreiber (Pol.), Red-Letter Day, H. V. Machin, Mrs. Campbell Hall, Lady Plymouth, Autumn Tints, Colleen, Florence Forrester, Countess Clanwilliam, William Cooper, Mrs. James Lynas, Admiral Ward, Katchen Meixner (Pol.).

Twelve Charles Graham, twelve Burgemeister Christen, six Gloire de Chédane Guinoisseau.

Of this list, the first twenty-three are all 1914 introductions.

The National Rose-Garden

By F. L. MULFORD, Landscape Gardener*
Department of Agriculture

THE Rose-Garden at Arlington Farm, near Washington, has developed a good deal during the past season. The turf walks have, most of them, become well established, which adds very much to the appearance of the Garden as a whole. A mound upon which a summer-house is to be erected has been raised at the most commanding point in the garden. This is 3 feet above the surrounding ground-level, and gives an excellent view of everything within the rose-fence. On this ground eight plants of Dr. W. Van Fleet rose have been planted with the expectation of being able to get the summer-house well covered with foliage the coming season. On the slope to this mound *Wichuraiana* roses will demonstrate their effectiveness as a ground-cover. From the turf walks surrounding the summer-house the rose-fence is expected to give a panorama of color.

At the nearest point are the yellow roses, which extend to the first corner. Then come white varieties followed by pink and red, all of these sorts having more or less *Wichuraiana* blood in them. After that, in reverse order, will come the hardy climbing roses, thus inclosing the garden with a mass of color made up of many different varieties. Inside of this will be the Climbing Hybrid Tea roses on pillars, the colors being arranged to harmonize with those on the fence background. More than one-third of the garden is being devoted to the Tea roses and Hybrid Teas, which are arranged as nearly as possible according to color, and in the same general order as the climbing roses. The different colors of the Tea and Hybrid Tea roses will form bands clear across the Garden, the lighter colors being most distant from the summer-house.

Good collections of Hybrid Perpetuals, Briers and *Rugosa* roses are already installed. Many rose species have also been

*Elsewhere will be found an account of the dedication of this National Rose-Garden. Mr. Mulford has charge of the work on behalf of the Secretary of Agriculture, and is giving to it enthusiastic and capable attention. Especial attention is asked to the request for additional varieties for this Garden.—
EDITOR.

planted, and will undoubtedly make a fine show the coming season. *Rosa Hugonis* is being watched with especial interest, as it is believed it will prove to be one of the most valuable single yellow roses. The collection of English and German roses which came to the garden last year is very promising and it is believed these roses will attract much attention the coming season. A mass of Dwarf Polyanthas along one side of the garden has been full of bloom all through the summer, and the great variety in color and character of blossom has made this bed an interesting study.

The turf walks not only provide a pleasing and satisfactory means of wandering among the roses but they also are of interest in themselves because each walk is composed of a different grass or combination of grasses, which will give the visitor an idea as to the relative value of different grasses for lawn and walk purposes.

Beyond the limits of the Garden fence many of the notable buildings of Washington may clearly be seen from the summer-house, as well as several features of Arlington Cemetery. In addition to these points of emphasis beyond the limits of the Garden itself, it is expected that formal entrances and corners covered by roses will supplement the pergola effects that are planned for the boundary walk.

It is the wish of the American Rose Society, as well as of the caretakers in Washington, that the Garden shall be one of interest to every rosarian, and especially to those whose home climate is sufficiently similar to that of Washington for the readings in the Garden to be of value in guiding them in their rose-growing. With this in mind, it is desired that just as many people as possible shall supply roses to the Garden. It is more to be desired that there shall be three to four hundred contributors with four or five roses from each than that there shall be ten or twenty with one hundred to one hundred and fifty from each.

Because of the feeling that it will promote interest in the Garden and thus make it of more value, it is urged that everyone who has any roses get in touch with the committee of the American Rose Society having the Garden in charge, and offer what he has, so that not only the collections in the Garden will

be as varied as practicable, but as many as possible shall feel an ownership in it. There are now about 450 varieties in the Garden, and it is the earnest hope of all connected with it that 1916 will see double that number installed. It is confidently believed that the Garden will prove of great value to rose-growers, and that it may the sooner exert the influence which it should, we trust that responses to this appeal may be prompt. It is hoped that many rosarians will visit the Garden when in bloom in 1916. Offers of plants may properly be addressed either to Robert Pyle, Chairman of the Central Test-Garden Committee, West Grove, Pa., or to the writer, at the Department of Agriculture, Washington, D. C.

The Minneapolis Municipal Rose-Garden in Lyndale Park

By THEODORE WIRTH

Superintendent Minneapolis Parks*

THE Lyndale Park Rose-Garden is most favorably located on the east shore of Lake Harriet, resting on a gentle slope, facing west, and coming to within about 400 feet of the shore of the lake. The topography of the grounds in 1906 was very different. There was a small, barren hill, and at its foot a low swampy hole. Few people would have selected this rough, unpromising ground for a rose-garden; in fact, most people doubted that it would be possible to grow successfully many varieties of roses in the Minnesota climate.

The success of the Hartford Garden, however, made the writer bold, and the grading of the grounds for this Garden was undertaken in the summer of 1907. The hill was scooped down into the swamp, requiring the moving of 5,000 cubic yards of heavy material. After the desired grade was established and top-dressed with good soil, the beds were laid out and thoroughly

*As will be noted in the article on the Hartford Municipal Rose-Garden, it was Mr. Wirth who planted and brought through to success that notable venture. When he went to the colder climate of Minneapolis ten years ago, the rose-garden idea accompanied him, and his success in surmounting climatic hardships is as creditable as is his even greater success in developing a wonderful and beneficent system of parks in that city.—EDITOR.

prepared for their purpose. The preparation consisted of the excavation of each bed to a depth of 18 inches; a 4-inch layer of cow-manure was then spaded into the bottom of the excavation and the soil replaced in reverse order, the top soil in the bottom and the bottom soil on the top. The beds were filled 4 inches higher than the ground and were left in an open spaded condition for the action of the winter's frost. The plants for the Garden were secured the same fall, but were over-wintered in deep coldframes.

The frost penetrated considerably below the depth of the beds and put the soil in the best possible condition. The beds, holding from thirty-two to forty plants each, were planted in the spring of 1908, and the plants made a remarkable growth the first year.

There are sixty-four beds in the garden and each bed was planted in one variety only. Forty-eight beds were devoted to Hybrid Remontant and sixteen to Hybrid Tea varieties. Of four larger beds at the upper end of the Garden, two were devoted to Hybrid Rugosas and Sweetbriers, and two to single roses.

The entire garden is inclosed with trelliswork, the panels of which are utilized for climbers. Arches for additional climbers were also provided. A narrow bed of 2 feet in width along the inside of the trellis, besides harboring the climbers, is also planted with Hybrid Remontant, Hybrid Tea, and Polyantha roses, and bordered with the little Midget rose, *Rosa multiflora nana*.

Only grafted or budded stock was used, planted deep so that the union was 3 to 4 inches below the surface of the bed.

While we were always confident of our ability to grow plants that would produce good flowers, we were, of course, well aware of the fact that our principal problem would be to provide proper winter protection. We took special pains to ripen the wood, and were favored the first season with seasonable weather. We stopped watering and cultivation in September and discouraged late growth. The last week in October we gave the beds a very thorough soaking, and a few days after we tied the shoots close together and piled the soil around the plants as high as we could with material taken from between the plants,

so covering from four to six of the lower eyes. The garden was then left in this condition until there were 3 or 4 inches of frost in the ground. We then filled in with dry leaves, gathered from the nearby woods. The leaves were thrown in loose and not packed down, and covered the beds to the height of the soil heaped around the plant. We then boarded in the long sides of the beds 2 feet high, and boarded over the top of the bed, but left the two ends open. Over this board cover we spread a good layer of bedding, straw, and hay.

It will be seen by the method of winter protection herein described that our aim was to prevent, if possible, thawing after frost had set in; to protect the plants from the drying effects of the strong winds without preventing the free circulation of air. We have employed the same method of protection ever since, and generally we have been successful in bringing the plants through winter in very good condition.

The uncovering is not done too early, and is done only gradually.

With the exception of the Hybrid Teas, we cut our roses back very severely. A plant with eight or more strong main shoots we reduce to four or five shoots, and these we cut back to three and four eyes. This somewhat retards the flowering season, but it produces good strong wood and the best quality flowers. It also prolongs the flowering season.

The climbers we lay down, and those which we cannot bury in soil we cover with leaves, over which we put a layer of paper, and this we keep down with bedding.

In insect pests we have the leaf-roller and caterpillar, which we try to overcome by hand-picking, while for the aphids and maggot we use nicotine preparations. Black-spot troubles us little because we take care not to over-water. For mildew we use, with success, a solution of six ounces of soft soap with two ounces of potassium sulphate in three gallons of water.

The Garden, with its 215 varieties of roses, has been the pilgrim-point for the flower-loving public of our city ever since its inauguration, and the ninth "Annual Rose Show," as the people have come to call it, will open at Lyndale Park, as usual, about the first week in July, 1916, and will continue as long as there is a flower in the garden.





PLATE VIII. A Section of the Minneapolis Municipal Rose-Garden

The garden contains at the present time 3,000 plants, as follows: Hybrid Remontants, 52 varieties; Hybrid Teas, 50 varieties; Climbers, 44 varieties; Polyanthas, 26 varieties; Sweetbriers, 16 varieties; Rugosas, 14 varieties; Singles, 4 varieties; Austrian Briers, 3 varieties.

The following are some of the best Hybrid Remontants in our collection: Mme. Gabriel Luizet, Baroness Rothschild, Anne de Diesbach, General Jacqueminot, Clio, Oscar Cardell, Marshall P. Wilder, Pride of Waltham, Hugh Dickson, Mrs. George Dickson, Marie Baumann, Tom Wood, Prince Camille de Rohan, Mme. Alfred Carriere, Mrs. R. G. S. Crawford, Frau Karl Druschki, Mrs. John Laing, and Heinrich Schultheis.

By reason of pruning after the first crop of flowers is over, a few of the varieties, such as Jules Margottin and Captain Hayward, produce for us second crops nearly as good as the first.

In the Hybrid Teas we have been very successful with the following varieties: Gruss an Teplitz, La France, Kaiserin Augusta Victoria, Richmond, Caroline Testout, Pink and White Killarney, Mme. Jules Grolez, Liberty, Maman Cochet, General MacArthur, Lady Ashtown, Mary Countess of Ilchester, Mrs. Aaron Ward, Mad. Second Weber, and Farben Koenigin.

Last year Henry A. Dreer, of Philadelphia, sent us fourteen varieties of Hybrid Tea novelties for a trial bed. They all did well but the following were exceptionally fine: Ophelia, General-Superior Arnold Janssen, Mme. Edouard Herriot, and George Dickson.

Of our climbers the Crimson Rambler has always done well, and the past year they were the best in the history of the garden—a really glorious sight. We also have good success with Goldfinch and Tausendschön. The Wichuraiana varieties of climbers do not winter over so easily. We have found it advisable to thin the wood out after they are through blooming, so as to lighten the dense foliage and give the wood a better chance to ripen. The Farquhar Rose, Dorothy Perkins, Excelsa, Evangeline, Paradise, La Fiamma, and Minnehaha have become great attractions in our Garden, and later introductions, such as Daybreak, Dr. W. Van Fleet, White Dorothy Perkins, American Pillar, Silver Moon, and Dorothy Dennison, are also making a strong appeal to popularity.

Among the Polyanthas, Mme. N. Levavasseur, Katherine Zeimet, Marie Pavie, Primula, Annchen Müller, Clothilde Soupert, Cecile Brunner, and Étoile d'Or, have done very well.

A system of water-pipes and hydrants makes it easy to water the plants whenever necessary. During the growing season frequent light cultivation is given. In the spring, after the leaves have all been removed, we apply a thin layer of well-composted cow-manure between the plants, over which we spread the soil which has been heaped up for winter protection.

Roses are great feeders, as every rose-grower knows, and they like a heavy turf loam, enriched with well-decomposed cow-manure.

The plants, in order to be at their best, require, of course, considerable attention, but they are thankfully responsive to proper cultivation. We must watch very carefully for the appearance of insect pests and diseases, and fight them the minute they appear. Proper cultivation will keep the beds free from weeds, and weeds in a rose-garden should be an impossibility.

Every day all faded flowers must be cut off. During dry periods spraying of the foliage in the late evening is helpful.

Each rose-garden has, depending upon location, existing soil, and climatic conditions, its own peculiarities, and the rose-grower, through careful observation, must find his way to overcome unsatisfactory conditions that may exist. One of the principal needs for outdoor rose-culture, in addition to good soil conditions, is an open situation, free from all shade, yet protected from heavy winds. The Lyndale Park Garden is protected by high ground to the north and east, and a belt of woodland to the south and west. The trees are kept in such condition as to offer the desired windbreak without entirely shutting off a light breeze.

The great increase in the use of roses for the decoration of home grounds and gardens in our part of the country is largely due to the demonstration in this municipal Rose-Garden. People come long distances to see the Garden, and at once become interested in the flowers and the plants. They become acquainted with the different varieties, and, according to taste, make their own selections.

In the center of each bed is a large, neat wooden label, on which the name of the variety is given in distinct white lettering on a dark green base. This makes the labels themselves inconspicuous, but the writing very prominent and readable. Below the name of the variety, the class to which it belongs is indicated.

The slopes of the Garden and adjacent grounds are planted in wild roses, such as *multiflora*, *alba*, *blanda*, *humilis*, *nitida*, *lucida*, *lucida alba*, *canina*, *rubiginosa*, *setigera*, and *rubrifolia*. You enter, so to speak, through an inclosure of wild roses, into the inner field of cultivated hybrids.

Lyndale Park is a tract of land of 60 acres. Through the success of the Rose-Garden, which is about 2 acres in extent, it has been decided to devote about 20 acres of adjoining high land to other horticultural educational purposes. Already 700 lilacs, in 150 varieties, make a fine annual show, which is immediately followed by the peonies, planted in large beds and many varieties. It is the intention to develop these grounds into a small arboretum, which will contain every tree, shrub and flowering plant well adapted for cultivation in the gardens of the Northwest. The Rose-Garden was the beginning of what is to become, horticulturally, the most interesting and valuable park of our extensive system.

Every city ought to have its municipal rose-garden, for similar happy and satisfactory results are possible wherever someone in earnest will undertake the work.

Roses in Minnesota and the Northwest

By E. W. REID, St. Paul, Minn.

WHEN our eastern friends read of growing roses in Minnesota they mostly take it with a grain of salt, or a smile, so much as to say, "You are dreaming!" Until fourteen years ago the writer was in close touch with rose-growing in the East and the Central West, and he has given much thought and study toward developing a deeper interest in the fact that roses, the same as other beautiful flowers, can be grown in Minnesota. Up until that time little in the way of

landscape design had been accomplished, and like all other sections it takes time for development; but in the past fifteen years no section has come forward more rapidly than this part of the Middle West.

It is true that we must give more care and more study to what is planted, and to its protection, than those in more favored locations; but when it comes to the finished product, no section can produce a more perfect rose, with more beautiful coloring, or having more healthy foliage. During the past season I had brought to my office from Duluth, Minn., a stem cut from a Gruss an Teplitz plant, 5 feet in length, with six perfect flowers; and this can even be accomplished 200 miles farther north than we are.

Our greatest trouble is caring for the climbing varieties. These roses must be protected, and the better way is to lay the vines on the ground and cover with building-paper—something that will keep them dry as well as protect them. I found, and still find, many who would use earth for this protection, but in the spring much of the wood was black, water-soaked and badly injured. When protected so that snow and ice did not come in contact with the wood, different conditions were found in the spring. It is quite a task to lay down such varieties as Crimson Rambler, owing to its heavy canes. This variety is also affected very much with mildew, wherefore we are growing other sorts, such as Excelsa for the dark red. Dorothy Perkins is much better for our climate than the earlier ramblers. The wood of these can be put in a small space and easily covered.

Where climbing roses are attached to a trellis, the trellis should be made so it can be taken down. Lay the roses flat on the ground and cover with paper; then protect with leaves or straw.

When roses are planted in the bed of a garden, it is much more convenient to cover. Make a frame around the bed, fill around the plants with dry straw, then cover the frame with waterproof building felt; and in the spring they come out in good condition.

In one of our rose-gardens in the city we have a bed of Tausendschön kept in bush form. The center plant stands about 4 feet from the ground, the others graduate down to

about $2\frac{1}{2}$ feet. The bed is round, and located in the center of the rose-garden. When in bloom it represents a huge centerpiece for a table, and is most striking with thousands and thousands of blossoms all out at the same time. The beds which cluster around it are of the Hybrid Teas, giving the garden a very pleasing effect during the entire season.

Our soil in Minnesota is well suited to roses. It has enough sand to make it warm in the summer, and to give good drainage in the winter. In preparing the beds before planting we use considerable care, excavating to a depth of 2 feet, using clay around the edge of the excavation, if the bottom is sand; then in the bottom we use sods and cow-manure 1 foot in depth, and the remainder good soil. It pays to give this extra care as the plants produce much better results.

In regard to varieties: We seldom use the Tea type. The reason for this is that our seasons are too short for them to make the growth and development they need before freezing weather. While we have beautiful autumns, we get cold nights the latter part of August and September, and the bush roses, such as Hybrid Perpetuals and Hybrid Teas are somewhat injured, and the Teas to a greater extent. They have not the vitality to overcome it.

The Tree roses do well here, but it is more of a task to protect their tops and stems. One manner of protection is digging a little trench up to their roots, then cutting the roots on the opposite side so the plant can be pushed bodily into the trench. The roots on two sides are not harmed, and by laying in the trench the plant can be covered with paper and leaves. In the spring there will be perfect wood uninjured.

We grow all the hardiest types. In Hybrid Perpetuals, Anne de Diesbach, Clio, Captain Hayward, Fisher Holmes, Frau Karl Druschki, General Jacqueminot, Mme. Gabrielle Luizet, Margaret Dickson, Mrs. John Laing, Paul Neyron, Prince Camille de Rohan, Ulrich Brunner, etc. In the Hybrid Teas, Caroline Testout, Clothilde Soupert, Gruss an Teplitz, La France, Kaiserin Augusta Victoria, Le Progres, Maman Cochet, Mme. Jenny Gillemot, Mrs. Aaron Ward, etc.

The rugosa types do well; they seem to suit our climate. This is especially true of the seedling rugosas; they need no

protection and flourish the same as shrubs, giving an abundance of bloom and fine foliage.

The trailing roses are beginning to be planted more than formerly. They are easy to care for, and the greater the development of landscape planting, the more and better they become known; also their uses.

We are trying to educate our people to plant roses from pots instead of when dormant. We pot our plants in March, hold them cold, and have them breaking in bud nicely at the planting season. They have formed their new roots in the pots, and are not checked when planted. It is a difficult matter with us to get planters to cut them back. In the North when we get May weather it is often very warm, and the wood dries before the plant starts. Our seasons change very rapidly; we go out of winter into summer, and the same quick change occurs in the fall.

Roses are an inspiration to all garden-lovers. No garden is complete without them, no arrangement satisfactory that neglects them—in fact, they are indispensable. And we have them here!

Roses in Ontario

By REV. A. H. SCOTT

Director The Ontario Horticultural Association, Perth, Ontario

EDITOR'S NOTE.—The Ontario Horticultural Association is the central body relating to some eighty organized societies in the Province of Ontario, of which about half hold annual flower shows in which the rose is a prominent feature. There are societies in Toronto, St. Catharines, Hamilton and St. Thomas which hold each year an exclusive rose show. The Provincial Government lends substantial support to all these organizations, which now include a paid membership of some 15,000. This great and fertile Canadian province is therefore very much alive in regard to the rose, and another year it is expected to present details of interest concerning the good work there going on.

THE rose is the first thing to greet you when you get a letter from the Horticultural Association of the Province of Ontario. Before ever you have a chance to note the date, the place from which, or the person by whom, there is before your eye, at the top of the page, a beautiful rose.

In our country we cultivate the rose that it may tell us of things that rise, rather than of things that fall. Goethe's idea is a good one:

"The rose is wont with pride to swell,
And ever seeks to rise."

The rose tells us in northern latitudes of companionship:

"Two roses on one slender spray
In sweet communion grew;
Together hailed the morning ray
And drank the evening dew."

It tells us of influence:

"Long, long, be my heart with such memories filled!
Like the vase in which roses have once been distilled;
You may break, you may shatter the vase if you will,
But the scent of the roses will hang round it still."

It tells us of God:

"What would the rose with all her pride be worth,
Were there no sun to call her brightness forth?"

At a rose convention in the Province of Ontario an expert told us that there is no such variety of rose as the American Beauty. He proceeded to explain by stating that the name American Beauty was given to a particular rose because when it flowered in a collection of roses in the United States, one grower did not know what it was. Asking several of his fellow gardeners what to name it, they suggested that, because of its rich fragrance, it should be called American Beauty. It came to be known afterward that the proper name was Madame Ferdinand Jamain.

Now what's in a name? It would be unprofitable to fill a page here with the names of roses. They come to mind by the score. A contributor to one of our rose gatherings last year stated that in his estimation the five best dwarf roses for Canada are Frau Karl Druschki, Irish Elegance, Joseph Hill, George Dickson, and Richmond. No two standard roses are superior to Conrad F. Meyer and Zephirine Drouhin. Jessie cannot be beaten among the dwarf Polyanthas; and the Common Moss, together with Comtesse de Murinais, top the list of Moss roses.

It is as true as that George Eliot said it, that in Canada "It never rains roses; when we want to have more roses we must plant more trees." Perhaps no more beautiful roses are grown in the world than those that flower in the Province of Ontario.

Canadian frosts, and the sun that shines in these northern climes, and the garden plots that lie along the shores of the myriad lakes and rivers of this choice section of earth, favor roses.

The older we grow in this portion of North America, the more roses we grow. We produce wheat and minerals in our large acreages. The world is impressed by our Northern Spy, our Macintosh Red, and our Fameuse, in apples. Alongside of Rochester we place Ottawa as the producing place of the finest lilacs on this hemisphere, and cultivated roses are going to vie with those grown in the towns and villages of Old England.

One of our enthusiasts belonging to the Ontario Horticultural Association said this to a large assemblage which caught the contagion that is spreading in this country:

"The rose fever is just as catching as the measles, the mumps, or some of the other ailments which flourish in Ontario, and I would that I had the power to inoculate each of you with a touch of it; because, once caught, like the old-fashioned ague, it is hard to shake off. If each of you in your gardens had a bed of a few dozen Hybrid Tea roses which would bloom from June until November, you would inoculate your circle of friends and neighbors with the laudable desire to do likewise, and the ball once started would, like the endless chain, continue to roll forever."

Roses at Egandale, Highland Park, Illinois

By W. C. EGAN

EDITOR'S NOTE.—At "Egandale," Mr. Egan has for many years maintained a notable garden, not only in the many plants there grown, but in the acute and well-recorded observation published. This plant-lover has thus rendered great service to horticulture in general.

ANYONE desiring to attain success in growing the finer roses in this northern Illinois climate, especially those residing near the bluffs of Lake Michigan, must sit up nights with them, and include them in their daily prayers.

We envy those living in a more favored climate where the modern climbers may be grown without overhead protection, and deplore the fact that the use of our native *Rosa setigera* as a parent plant in hybridization ceased after Feast in 1843 gave

us Queen of the Prairie and Baltimore Belle, the two hardiest climbers up to the present date—but still not entirely reliable here, unprotected.

With this rose, Dawson's Lady Duncan, Bowditch's Rosa Graf and the creeping form of *Rosa rugosa alba*, all having climbing tendencies and all hardy here, some up-to-date hybridizer should come forward and endeavor to produce a climber that would stand our climate and bloom without being constantly attended by a trained nurse and competent internes! Such a man, if successful—and with patience he would be—would not only reap a fortune but would be blessed by a host of rose-lovers now deprived of having what is nearest to their hearts—a really hardy free-blooming climbing rose.

I have climbing roses, and not having been East since the advent of the modern climbers I think them fine specimens, and take pride in my Dorothy Perkins' 18-foot height of bloom. But Mrs. Egan on her return from a visit in the East during the rose season calmly informed me that I did not know what a climbing rose was, and would not, until I saw them in New Jersey. I presume that they bask in the sunshine of John N. May's genial smile and thus thrive! However, I have them every summer, often when the winter's cold has cut my neighbor's to the ground, although wrapped in straw. My living varieties are limited, but those that were tried and found wanting fill a large-sized graveyard. Those that carry over winter well under my method of protection are Dorothy Perkins, Tausendschön, American Pillar, Paul's Carmine Pillar and Russell's Cottage. The Seven Sisters has wintered with me for some twenty years under a straw wrapping, but as many others failed to do so under similar treatment, or even bent down and covered with soil—a treatment Manda's Rambler resented until it succumbed—I finally adopted the following method:

Oak leaves are gathered when dry and stored in a shed until wanted, thus keeping them dry. I presume I use about a hundred bushels. About December 1, by which time the roses have endured some 10° to 12° of frost, they are taken down and the long canes tied in bunches, each containing as nearly as possible shoots starting near each other. These are laid on the ground and coiled in as compact a bundle as pos-

sible. Knocked-down sides of boxes are placed around them and the dry leaves packed loosely around. The compactness of the coils does not allow the leaves to pile up under them, which, with the looseness of the leaves, allow the roses plenty of air.

A *tight* cover is then put on, and they are affectionately bidden goodbye until spring. Taking them down and bundling up the canes causes me to be busy for a week or so explaining that the numerous plainly visible scratches were not due to any family disputes!

In the spring the leaves are carted out to the leaf-mold pile, the cover remaining for a few days, when it is removed. Later on, the sides are taken away, but the rose is allowed to lie on the ground for a while, unless the new growth is too far advanced to endanger it when being put in place. Dead wood and spent canes are cut out in the fall.

Hybrid Perpetuals may be grown here with fair success, as far as the June bloom is concerned, provided they are given the same dry-leaf protection as I do the climbers. I grew them for over twenty years, but finally abandoned them, as the mildew and black spot made them unsightly after midsummer. There is no doubt but that if I gave them the attention and care I did this summer to a trial lot of forty-two Hybrid Teas I could have conquered those defects; but I needed the inspiration of the reward the Teas give in their profuse fall bloom. I think I can carry these Teas over winter, and perhaps may tell you in a year from now how I treated them, and how they treated me. I planted dormant stock March 21 last, and attended to them diligently. They have rewarded me generously even up to frost. Egandale never had so much beauty in it before, nor smelled so sweet as it did this summer, and these Hybrid Teas must be the cause. Even if they are treated as bedding plants and thrown away in the fall, they are worth their cost.

The *Rosa rugosa* and its hybrids have been a blessing to this section, and the Cherokee rose of the North—*Rosa spinosissima* var. *altaica*—is as hardy as a rock and charming in its simplicity. The old-fashioned Harrison's Yellow and most of the mosses stand our climate, but are little grown.

The Garden Use of Roses Near San Francisco Bay

By PROF. R. T. STEVENS

University of California, Berkeley, Calif.

THERE are few places in California where the rose can be grown more successfully than around San Francisco Bay.

Unquestionably, the climate is responsible for this, as the mild, even temperature which prevails the year round constitutes ideal conditions for the continuous growth of the plant. The abundant rainfall of winter assures a blooming period well into May, while the cool, moist fogs and winds from the ocean in summer tend to prolong the season.

Roses seem to be well adapted to the average soil found in this vicinity, provided of course, it is sufficiently enriched. The same rules governing the selection of different soils for different types of roses are as important here as elsewhere, but as a rule less attention is given them.

Because of the fact that roses generally will grow more rapidly with less care and produce greater effects than in many other parts of the United States, there is an unfortunate tendency to use them as a fundamental element in landscape embellishment. Too often are bush roses found bordering the driveway and entrance walks, in round beds in the open lawn or even employed as shrubs around the residence itself. The rose in this mild climate is unsightly at certain seasons of the year. Roses, therefore, should be confined more to the rose-garden, and the latter so placed that while it may enter into the general landscape scheme, it will at no time be so prominent as to appear in unsightly contrast with the remainder of the esthetic development.

On the other hand, the rose-garden in California can occupy a more important position in the landscape development than in colder climates, as the plant is not only ornamental for longer periods, but certain other plants can be grown in the rose-bed without interfering with the bush itself, and thereby relieve the bareness of winter; while at the same time many broad-leaved evergreen shrubs may be closely associated with the rose-gar-

den to produce winter flower effects and direct attention from the dormant state of the rose.

While rose-gardens of some type form an integral part of every large estate and most suburban gardens of the Bay district, they are often poorly designed. Few present a thought-out scheme and there is often a very evident lack of unity. Little attempt is made to develop the garden around a central feature, as a sun-dial or structure of some kind, while nearly all large gardens are monotonous and lack variety in height. More interest should be produced by the use of standard roses, by columns, arches and garden furniture. One of the most effective devices for large rose-gardens is a series of pipe arches arranged around a central point upon which several varieties of climbing roses are allowed to tangle, producing a large dome-like mass of flowers and foliage.

Another fault with many large rose-gardens is the failure to segregate types of roses into separate beds, so they can receive the benefit of different soils and treatment. Very often the varieties are indiscriminately mixed in the same bed, irrespective of color, size or culture. Undoubtedly one reason for this is the fact that, provided fair treatment is given, most varieties will respond somewhat satisfactorily, whether they be Teas, Perpetuals, or Hybrid Teas.

Rose-gardens are designed in many ways in California. The plants may be in simple beds, or they may be grown in beds arranged according to some design with dirt or gravel walks between. The more elaborate gardens consist of some formal scheme with a fountain, summer-house, or picturesque tree as a central feature and, except for the principal walks, the space between the beds is covered with some form of sod. In the cool Bay district this is usually white clover or Kentucky blue-grass, but in those drier localities farther from the ocean, a small creeping perennial from southern Italy, named *Lippia canescens*, is employed. This plant is drought-resistant to a considerable extent, and can easily withstand the dry conditions when the roses are allowed to rest in summer. Provided it is not allowed to seed, and is given some attention, it produces a fine, close mat, which withstands far more trampling than lawn grass.

If the design of the garden demands an edging or border to

the beds, there are many drought-resistant herbs, as gazania, rock rose and the ice-plants, that are better for such purposes than the time-honored boxwood, which will not withstand the full sun of California summers.

As most people know, roses even in California demand a period of rest if the best results are to be obtained. California winter temperatures are not low enough to produce the necessary degree of dormancy, and the rose bush, if irrigated during the summer, will produce an ordinary grade of bloom more or less throughout the year, depending on the type of rose. On the other hand it will, in most cases, not only fail to furnish the finest blooms, but will soon deteriorate and die prematurely, due to the continual forcing of growth. It has become customary, therefore, to force dormancy upon the plants by withholding water in midsummer, a time when because of dry weather, few good blooms are produced. Toward the close of the spring crop, or about the first of July, depending on the condition of the soil, water is withheld from the plants until the first of September. They are not allowed to suffer, but made to ripen their wood and recuperate from the strain of the season's bloom.

During August the plants are gone over and all stubs and weak growth removed, after which a heavy mulch of cow-mannure and a liberal amount of water are applied. Irrigation is kept up until the first new bud is blown, when it may be discontinued to allow the wood to ripen for the winter pruning. In this manner an abundant supply of fall bloom is produced, almost equal to that of spring, while at the same time the plants are insured against an early deterioration.

Heavy pruning is performed in January, at which time the wood of the previous season's growth is well ripened. In early spring the beds are again mulched and the plants sprayed with bordeaux as a preventive against mildew. After the rains have ceased, the garden is given a thorough cultivation and overhauling, after which little attention is required until the summer rest, except an occasional irrigation, followed by a superficial working of the soil. Under this treatment the first flowers of the spring crop appear in February or early March, and continue until about the first of July.

The superiority of budded roses is believed to be generally

recognized. Some types, especially Teas, are too weak and delicate for ordinary outdoor culture unless worked on a more vigorous root, and the majority seem to be more or less improved when so treated. Budded plants are here not only more vigorous and longer-lived, but are more adaptable to wet and poor soil conditions, and will produce larger and earlier flowers in greater quantity than own-root plants.

To alleviate the unsightly appearance of bare, cultivated earth in the beds, various varieties of shallow-rooting annuals are often planted among the rose bushes. These consist of low, spreading, quick-growing annuals, furnishing a filmy ground-cover. Throughout the winter and early spring pansies are excellent for this purpose, and they are often followed by forget-me-nots, annual phlox and gypsophila, mignonette, violas, and late in the season, by the little South African nemesias. Sweet alyssum will also furnish an all-the-year-round flower effect, and is especially useful for edgings and informal borders.

While climbing roses are widely grown in California, they are not always exhibited to the best advantage. Too often they are seen covering a residence instead of a structure especially built for such purposes. The possibilities of roses of the Noisette type, used on columns, arbors and pergolas as ornamental garden features, are great; while many varieties as the Cherokees, Gloire des Rosomanes and Agrippina prove particularly adapted to cover fences and to serve as hedges. Because of the mild climate, climbing roses are apt to greatly overgrow their position and often become unsightly in shape and appearance. Intelligent pruning and thinning are necessary to correct these conditions.

Roses grow easily and bloom freely in this equable climate, but it is believed much finer and more satisfactory results would originate from a close study by the amateur of the correct culture and treatment of the various types of roses adapted to California, with particular reference to their summer rest.



The Queen of Flowers in the Land of Flowers

EDITOR'S NOTE.—Florida is a special state in the American union, with soil, climate and conditions peculiar to itself. It is indicative of the universality of the rose that it flourishes most luxuriantly in the great peninsula, under proper treatment. The two following articles, both by men who know, will indicate the treatment and the varieties for success.

Roses in the Lower South

By H. HAROLD HUME, Glen St. Mary, Fla.

IN no section of the United States can roses be grown in greater profusion or brought to greater perfection in the open ground than in the lower group of southern states. Here and there certain soils, because of their poverty or their open, porous nature, or because of superabundance of water, have to be excepted, but these exceptions are few and far between.

The true rose enthusiast may in the lower South take up his work, certain in the assurance that success will crown intelligent effort. But many have tried, and unfortunately have failed. Was their love for the rose insufficient to carry them over the difficulties that came between the time of planting and the delightful satisfaction of growing shoot and bursting bloom? Were they not patient enough or kindly enough in the care bestowed upon their plants? Doubtless so, and yet many such have failed, because perchance their knowledge of rose-culture was gained under another set of conditions of soil and climate, or they were misdirected by those from whom they sought information.

To succeed with roses, certain conditions must be met. Among the requisites for successful results there are five important ones: well-prepared soil, a proper selection of varieties, the right sort of stocks, good cultivation, and a knowledge of how to handle a few rose pests.

How the land should be prepared will depend upon what one has to start with. Drainage should have careful attention, for a moist soil with poor facilities for removing surplus water is a hard place to grow roses, especially in a region where the annual rainfall may reach 50 or 60 inches. Yet the land should be moist,

or it must be kept moist; for a dry root home is no place for a rose to grow and bloom. Some soils are too sandy, and some soils have too much clay in them.

I once saw a flourishing orange orchard on the shore of the Mediterranean, located partly at sea-level on beach sand, and partly on stiff clay on the hills above. But the character of the soil in both locations had been changed by carrying the sea-sand to the hill and taking back the hill clay to mingle with the sand at the water's edge. Now that same plan makes excellent preparation for roses in many places; for in some the clay is too stiff and tenacious, and in others the sand is not sufficiently retentive of moisture and plant-food. Many clays may do without sand, but there is no better way to improve the rose condition of a sandy soil than to incorporate some clay with it or to put a clay bottom in it.

Handling soil in large quantities is costly work and good results can be secured where the roses are to be set some distance apart by digging a hole 2 feet square and 18 inches deep, filling in the bottom with 6 inches of good stiff clay, and the remainder with a mixture of thoroughly rotted stable manure and mold from the woods in equal parts. Closely planted beds are best prepared by digging out the whole area to be occupied by the bushes and filling in in the same way. Sometimes the clay is not at hand. Then a goodly measure of success may be secured by filling in the holes with the mixture of mold and manure, and mulching the ground heavily after planting. This mulch may consist of anything available. Best of all is coarse strawy manure, but grass, excelsior, old papers weighted down, boards, palmetto leaves, in short anything that will shade the surface soil, keep it cool and prevent moisture from escaping, may be used. For the rose in the South is a shallow-rooted plant and its root-system is developed in the top 8, or at most 10 inches of soil.

Varieties! Their name is legion, and most of them are worthless for the rose-garden of the lower South. The group or class to which a rose belongs is a guide of some value in making a selection, but it must not be followed too implicitly. There is a wide difference in the members of any group; some are lacking in vigor of growth, some cannot withstand the heat of summer,

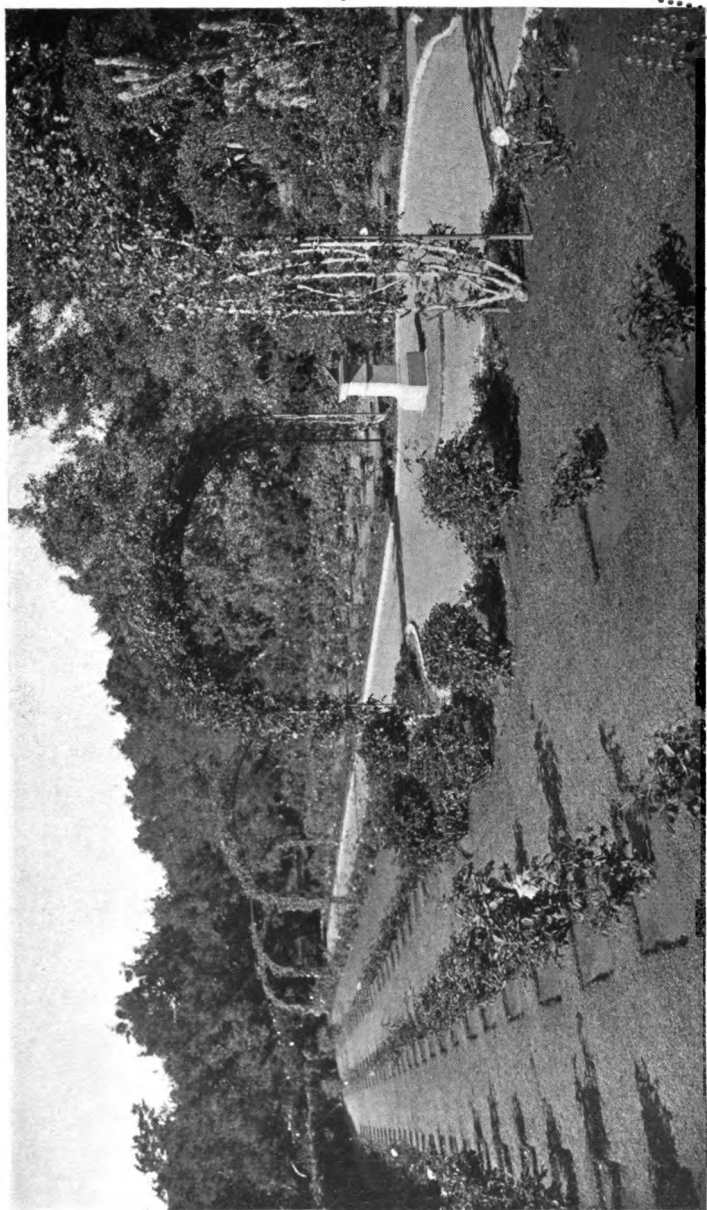


PLATE IX. A California Rose-Garden, treated as part of the landscape. (See Prof. Stevens' article, page 94.)



making a growth of 10 or 12 inches in spring only to have 6 or 8 inches of it die back in summer; the blossoms of others blight sadly. Only an actual test will answer the question as to whether a variety is here worth growing or not. To further emphasize the point,—in the winter of 1912, thirty new varieties, ten plants of each sort, of Tea and Hybrid Tea roses were purchased for testing. The best judgment based on parentage and catalogue descriptions was used in making the selection. Only three out of the thirty have survived as being worthy of propagation; the others are remembered by their names only. Taking this whole group of roses, I am convinced that the proportion of varieties adapted to our conditions is less than 10 per cent. It is a problem, this sifting out of varieties that can be taken care of only by large propagators. Not much wonder is it that many fail?

The great roses for the South are the Teas and the Hybrid Teas, and in a climate where they will bloom almost the year round, they should be given the large place. Among the varieties tried and found best suited, as bush roses and as climbers—some very old, others comparatively new—are Freiherr von Marschall, Papa Gontier, Gruss an Teplitz, Reine Marie Henriette, Bon Silene, Duchesse de Brabant, Mme. Joseph Schwartz, Mme. Jules Grolez, Mme. Lambard, Minnie Francis, Maman Cochet, Santa Rosa, Devoniensis (climber), Kaiserin Augusta Victoria, Marie van Houtte, Queen, White Maman Cochet, Isabella Sprunt, Reve d'Or, Safrano, and Solfaterre.

Good yellow bush sorts are scarce, so far. The blooms of many blight badly. Some will succeed where clay is plentiful. In the above list are bushes which in four or five years will grow so large that you will need a step-ladder to pick the flowers, for they become veritable trees.

Among the Hybrid Perpetuals only a few are worth growing. In any case, they give a few blooms in early spring; then come the long rose-lean months of summer with never a flower to lighten the branches, to be followed in the cooler days of autumn by another short and scant blooming period,—then rest. For those who like roses that behave this way—Paul Neyron, Anne de Diesbach, Gloire Lyonnaise, Marshall P. Wilder, President Lincoln, Her Majesty, General Jacqueminot, and Duke of Edinburgh will be found satisfactory.

Frau Karl Druschki is here, as it is elsewhere, in a class by itself,—a Hybrid Perpetual of everblooming habit, a truly wonderful sort. There are some Bengals, including Agrippina, Archduke Charles, and Louis Philippe that are good. Of the Noisettes, Marechal Niel, Woodland Margaret, Lamarque and Chromatella are all good.

The Cherokees, gorgeous in spring, are thoroughly at home here; the pink sort and Ramona will give scattering flowers through a long period. Banksias are fine and give a wealth of bloom in the early months. The small or dwarf ramblers are good. The old Crimson Rambler fortunately seldom blooms, and is much subject to mildew. Enough of varieties; no attempt has been made to include all the good ones.

Rose stocks! Why not grow roses on their own roots? Well, here and there, own-rooted roses of some kinds will do; it is hard to lay down a general rule to which there are no exceptions. But if the best results are desired, in the coastal plain section, in nearly all Florida, in the lower parts of the other gulf states, roses grafted or budded on suitable stocks must be planted. There are spots here and there where the others will succeed, but it is a great deal easier to plant budded or grafted roses than it is to work out the exceptions. Hence the safe general planting rule is, plant roses propagated only on suitable stocks. Why? A rose needs all the vigorous growth in this territory that you can impart to it, and the right sort of stock will help mightily. Then the roots of many, many varieties are attacked by nematodes, always present sooner or later in the lighter and better-drained soils in the lower South. How many varieties are so affected? I don't know, and it would take too long to find out. So the only safe rule is to propagate roses on vigorous, nematode-resistant or root-knot-resistant stocks, and look forward with confidence to flowers in abundance. Manetti is good, Mme. Plantier is good—both will give satisfaction. Some other stocks are suitable, but I don't know enough about them yet to say very much. But there will be some developments in this direction before long.

Now, I know the objections that may be urged against the grafted roses. They cost more to grow; the sprouts from the roots confuse the novice, and sometimes he nurses the sprouts

only to find himself in a few seasons with plenty of bush and no flowers. I know all that; but the rose on its own roots in a large way is a failure in the far South. So the grower must learn to know root sprouts from tops, and take care of them.

Briefly as to cultivation and fertilizing. Not much cultivation is required. The soil having been thoroughly prepared, the after-cultivation will be concerned in taking care of weed-growth. Mulching is a practice already touched upon, good to follow, and under some conditions the real keynote of success. If it isn't adopted, the soil must be kept stirred to preserve a dust mulch and to prevent moisture waste. The amount of fertilizer that can be used to advantage is related to the moisture available and to the humus in the soil. We can get excellent results from commercial fertilizers if there is plenty of humus present. If it isn't there it would be well for us to put it there before using such fertilizers. I like stable manure; it matters not where it comes from—cow or sheep or horse or hog. Scatter it on the surface, and if water is plentiful it can be used liberally. I have a single Reine Marie Henriette rose on my back porch to which I applied two large wagon-loads of stable manure in a single season! The next spring the reward was more flowers than leaves; there were 40% open blossoms and partly open buds on it by actual count at one time. That was some years ago. It is a good bush yet, though it has not since equaled that record, perhaps because it never got so much manure in any one season since.

Just so long as everblooming roses can be kept growing they will bloom. In some sections there is enough cold to stop growth in winter. But during the growing season, the bushes make a growth, bloom, harden up that growth, and then start again; one cycle after another of growth, bloom, and hardening.

Fertilize at the close of each growth for the starting of the next one. Prune during the dormant period. Severe cutting back cannot be recommended as a constant practice; it will kill the bushes eventually. Thin out carefully, cut back sparingly, is a safe rule.

There are some pests; the rose-grower would not be happy without them here, for his reward would be too easily won. But they are not serious. Aphis and tobacco extract go well together

to the benefit of the plants, when necessary. Leaf-fungi, particularly the rose leaf-spot, are best handled with bordeaux mixture. The thrips, which cause the flowers of so many otherwise good varieties to blight, can be handled by cutting back the buds which show color and all open flowers with long stems, and spraying thoroughly and as often as necessary with laundry soap, one pound to five gallons of water. The job must be thoroughly done in the interest of the following crop of bloom.

The basic principles of successful rose-culture in the lower South have been thus briefly touched upon. With these as a starting-point, no one should fail, and labor's reward will be ample.

Roses on the Florida West Coast

By E. N. REASONER, Oneco, Fla.

WITH our light sandy soils, and relatively high temperature through the year, Teas, Bengals, and Noisettes do the best. Hybrids are more subject to fungous diseases; our climate is humid, hence fungus germs spread and multiply rapidly.

Soil preferred is heavy low land, always moist, but drained sufficiently so that rain-water does not stand long. The addition of clay or the heavy black muck from under our surface peat ponds is necessary to give body to our light soil. Adding crushed bones, leather scraps and other slow-rotting material is excellent. Manure from the dairy is best, but stable manure well rotted, pulverized poultry droppings, etc., may be mixed in through the rose-bed; and after plants are established about six months, light applications of further manures to the surface of the soil when hoeing are necessary for best results. Bone meal and tankage are easily purchased, and seem to be about the best to use; do not use cottonseed-meal.

Marl or lime rock seem unnecessary; somewhat acid soil does no harm to roses, we find from experience.

Hoe often; prune lightly but thoroughly about every two months, applying surface applications of fertilizer at same time. The aim is to give a constant and high cultivation from October to April, when flowers are mostly desired; letting them rest dur-

ing the summer by mulching the surface with leaves or straw, and omitting cultivation is good practice.

Plant roses in full sun exposure; shade is not desirable.

Watering must be done very thoroughly and often, so that the ground is kept well soaked. With our dry season in winter and spring this is sometimes quite a task, but is very necessary.

Dusting the leaves with flowers of sulphur to keep down fungous troubles seems about all that is needed along this line; apply when leaves are damp. If any leaf-eating insects are in evidence, dust the foliage with hellebore, or a mixture of paris green and flour, or spray with arsenate of lead. We rarely have any trouble with insects of this character. More trouble is caused by thrips than anything else, so that occasionally a spraying with tobacco extract is needed, or else dusting with some form of powdered tobacco. All these applications are undesirable from an esthetic standpoint, and by constant attention to hoeing and pruning, and cutting the flowers, the growth may be so well maintained as to make the insect loss negligible.

Roses must be set deeply in the ground; they do not do well with roots near the surface. Weak growers must be grafted on strong stocks such as Manetti, or native American species. After a beginner make a success with the Teas or Bengals, then he may start in on Hybrids, remembering to cut the flowers with as long a stem as possible each time, so that strong shoots will be forced up from the ground.

Roses at Willowmere

ADMIRAL AARON WARD, in whose great garden on Long Island the rose has the place of supreme honor, has done much to advance interest in rose-growing. He has imported and given the best attention to the productions of the great foreign rose-raisers, and has in the wonderful showing of flowers in his great gardens set forth to advantage the place of the rose in America.

From an article in the August (1915) "Garden Magazine" the following is condensed:

Anyone who may have gone solely for Charity's sake to the garden of Admiral and Mrs. Aaron Ward, when it was opened

on June 8th to the public for the benefit of the American Ambulance Hospital at Neuilly, was fully rewarded.

At the entrance to the garden proper one sees flowers and more flowers as far as the eye can reach.

Probably the most greatly admired rose was Madame Edouard Herriot, sometimes known as the Daily Mail rose, because it won the wealth-making prize offered by that English paper for the finest new rose. It is the offspring of an Austrian Brier and a Tea, and is of the most beautiful shade of crushed strawberry to which some champagne has been added. The buds are deceptive, being of a rich, deep red.

In the bed next was rose Willowmere, named for the Ward place, and although not in bloom that day I would like to describe it in Miss Ward's words: "It is much the color of the Herriot, only finer; it is a stronger plant and a freer bloomer." Lady Roberts was another rose much admired; it is of a pale apricot-color, very large and beautiful.

The bed of Mme. Second Weber was wonderful, being in full bloom, the individual blooms being of extraordinary size.

The foliage of all the roses in this garden was in perfect condition, and the careful labeling of all roses was a joy.

The long beds were charted, and these charts, under glass were fastened on posts the proper height and at the proper angle to be easily referred to.

It is interesting to know that the Hybrid Perpetual roses, 1,200 strong, have been discarded from this garden, having been tried and found guilty of too short a period of bloom. The beautiful Frau Karl Druschki, however, has been kept, for although classed with the Hybrid Perpetuals it has most of the charming characteristics of the Hybrid Teas.

There were some fine specimens of *Rosa rugosa*, several as perfect Blanc Double de Coubert as it has been my good fortune to see, and several of the fine Conrad F. Meyer.

Few of the Climbers were in bloom, but I noticed, among many others, some thickly budded plants of the exquisite Aviateur Bleriot on the arbor over the central path. When in bloom its buds and flowers are like miniature Mrs. Aaron Wards borne in clusters, and these, when arranged in combination with forget-me-nots or blue cornflowers, are lovely.

The Value of Rose Organizations

EDITOR'S INTRODUCTION

In a letter from Mr. Robert Pyle upon rose-growing in Europe, he notes the fact that a foreign rosarian found coming to him more orders from Oregon than from all the balance of the United States. Other rose-growers have confessed that from Syracuse emanate many orders for roses. It is the obvious conclusion, therefore, that rose societies stimulate rose-growing. It may well be hoped that local rose organizations will spring up all over the country, and it is the aim of The American Rose Annual to act as an annual clearing-house for their doings. Our neighboring Canadian friends have "beaten us to it" in organization, as may be noted in the editorial introduction to the article, "Roses in Ontario." As may be noted in President Pennock's article (see page 12), affiliation with The American Rose Society is welcomed.

What an Amateur Rose Society Can Do for a City or Community

By REV. E. M. MILLS, D.D.
President Syracuse Rose Society*

WHAT a man does, when he is free to do what he likes, shows what manner of man he is. The recreations and sports of a people go far toward making or marring them. Some sports, or so-called recreations, are so expensive in money, or health, or morals that the wise let them alone. Some are so strenuous or exciting or hazardous that they cannot be recommended. American life does not need more but less stimulation. Men must have periods of rest and recreation. If these are wisely chosen and used, they result in more and better work and longer life.

Rose-gardening cultivates the taste, promotes acquaintance with refined people, and is favorable to health. It furnishes moderate outdoor exercise; it calms and quiets the nerves. One of average means may have a rose-garden; though it cannot be

*Dr. Mills has practised very fully what he here preaches. The Syracuse Rose Society, of which he is president, had 266 members in 1915, and is growing lustily. It furnishes the most notable instance in the United States of how readily the interest of our people in rose-growing can be awakened. In Ontario, not so many miles north and west of Syracuse, there are more than fifty prospering horticultural associations, each of which, encouraged by the provincial government, conducts several flower shows annually, of which the rose exhibition is always the chief.—EDITOR.

denied that much money can be spent, but need not be, in rose-growing. People of wealth, if they are lovers of the beautiful, will grow roses and have rose-gardens whether there is any amateur rose society in their community or not; but often their gardeners choose the varieties they have—they do not themselves even know the names of the most common kinds. Such need to become members of an amateur society to know the rose-lover's joy.

The man who has his gardener do all the work but cutting the roses or leading admiring friends through his conservatories or gardens has not taken even the first degree as a rose-lover. Let him but meet with rose-growers who are in the work, not for the money there is in it but because they love the rose, and he is not likely to remain content to have all his information and enthusiasm in his gardener's name!

Rich men and women who open rose-gardens so everyone can visit them are public benefactors, and by so doing they can considerably encourage rose-growing. But it is far more important that 500 people in a city have rose-gardens with from twenty-five to a few hundred bushes in each of them than that there should be only a few large show gardens.

The rich man can afford to make experiments through his gardener, but the man whose time and money is limited cannot afford to make many mistakes. The amateur rose society of a community can syndicate the information and enthusiasm of all its members, and make them available to all who love roses and who wish to learn how to grow them. The beginner is thus saved from costly and disheartening failures. An amateur rose society can encourage the beginner to attempt all that can be done, and warn him against attempting what is not worth while, or is impossible.

A score of people are growing Tea and Hybrid Tea roses where one grew them five years ago in the city in which the writer lives. They have learned how to "winter" roses. With that information the garden that used to be a disappointment is now a delight. Hundreds of people have said "I wish we could grow roses in our climate; I have tried it, and my bushes winter-killed. Of course the rose is the most beautiful of flowers, but one has them for such a short time—a burst of glory in



PLATE X. A Street of Roses in Portland, Oregon
(By courtesy of J. Horace McFarland Co.)



June, and then all over for the year." Now demonstrate to these doubting, discouraged lovers of the rose that many of the most desirable roses, with proper winter protection, can weather a northern New York blizzard, and that no other flower can be made to so constantly bloom from June to October as the rose, and they are eager to try again.

The third Tuesday evening in October, 1915, three members of the Syracuse Rose Society brought to the monthly meeting of the Society four dozen Tea and Hybrid Tea blooms from their gardens. Other members testified that there had been no day from the middle of June until the first of October when they had not had roses. Annual flowers come and go, but when one comes to know that he can have roses through the entire summer, he straightway joins the rose-growers' guild for life.

But if it is important that the beginner learns that even in so rigorous a climate as central or northern New York he can winter Teas like Lady Hillingdon, the pink and white Cochet, Marie Van Houtte, and W. R. Smith, and all Hybrid Teas, he must be warned that though he has admired Cloth of Gold and Marechal Niel in the far South, or in southern California, he cannot grow them out-of-doors in the North. There also are many Hybrid Teas that are only worth growing for exhibitions; their blooms are so few or so imperfect when grown outdoors that they do not pay for the space they occupy.

There are plenty of free-blooming, vigorous and comparatively hardy Hybrid Teas, but there are also many that bloom but seldom. The amateur who begins with roses like Mildred Grant will be disappointed, while a rose like Radiance will make him forget that he has ever failed.

Then the beginner must be warned against the wiles and blandishments of traveling agents who know nothing about roses or rose-growing. Furnished with pictures of impossible blooms, a boundless imagination, and an invincible disregard for the truth, their prices are often regulated by the credulity or caution of their victims. Whole neighborhoods after such a visitation wake up the following summer to realize that they have loved the rose not wisely but too well.

Again, the hopes of the would-be rose-grower are wrecked by careless clerks in the department stores where roses are sold.

One purchaser who thought he had bought twenty-four varieties of Hybrid Teas found he had two dozen Dorothy Perkins in a small bed. Those who smiled as they passed by that bed did so at their peril, if the owner was near!

The credentials and record of the average itinerant rose agent should be scrutinized as carefully as those of the minister whose past is unknown. There are plenty of reliable firms from which one is certain of getting the worth of his money. One of the missions of an amateur rose society is to inform its members where they can get what they order, and at reasonable prices.

The conscientious and successful grower of roses for the cut-flower trade is not always a safe guide for the novice in the culture of roses outdoors, for the reason that many roses that do well under glass are practically useless when grown in a garden. The amateur rose society, with its monthly meetings, where the foremost professional and amateur rosarians give addresses, can instruct a lot of people at a time. After the address of the evening the lecturer is bombarded with questions. The daily newspaper, with its report of the address, repeats it, and gives it a much larger hearing. The president of the rose society, at the close of the meeting usually gives the current events in the rose world.

City officers are quick to establish municipal rose-gardens when there is a real demand for them. Syracuse has the beginning of a fine city rose-garden, because the members of the society individually and at the meetings of the society and through the daily newspapers have urged the establishment of such a garden. The new mayor of Syracuse is a member of the Syracuse Rose Society, as is its superintendent of parks, while one of the park commissioners has been absent from but two of its monthly meetings in four years.

But the great opportunity for interesting the public and of getting recruits for the society is the annual rose show. The daily newspapers vie with one another in advertising it. There will be no prize as at the national rose show for 200 or 500 blooms of a kind, but there will be ten times as many varieties exhibited as are shown at the national event. For the two days and evenings when the show is held, hundreds of people, notebooks in hand are inspecting the exhibits and asking questions.

Two or three of the best-informed members do nothing but identify flowers, the names of which the owners have lost.

Syracuse held its last show in a downpour of rain that extended over the two days of the meeting. Admiral and Mrs. Aaron Ward gave delightful addresses, and the hall in which the show was held was literally jammed.

The 300 paid-up members of the Syracuse Rose Society do not represent all its influence. Hundreds of people who do not belong to it have rose-gardens because of it. Now there are a hundred men and women who can give an instructive and illuminating address on rose-growing, where five years ago it was impossible to have a meeting without outside help. At least a dozen addresses on rose-culture have been delivered before literary clubs and ward improvement associations during the past year in the city.

The Marquis of Queensbury is reported to have once said that "The only place where Englishmen meet on the level is the race-course." But the amateur rose society is the most cosmopolitan organization of the city in which it is located. Men and women of all nationalities, of all political and religious faiths, meet in loving concord. Hebrews and Christians, Romanists and Protestants, the employer and employee there forget their differences, as they exchange rose experiences.

The gentlemen of the trade, when asked to contribute a few bushes as prizes for the rose show of some amateur rose society, have a fine opportunity in so doing to help in building up the business in which they are engaged. The show interests people in rose-growing; they must buy roses somewhere. Many of them will not only buy next spring, but every spring as long as they live.

There are single blocks in Syracuse where more roses are now grown by amateurs than were grown on any whole street in the city when the Syracuse Rose Society was founded. In the block where the writer resides the man who does not grow roses is the exception and not the rule. The motto of the Society is, "Syracuse, the Rose City of the Empire State." The members expect to see that dream realized and do not doubt that Syracuse will also come to be "the City Beautiful of the Empire State."

Rose Societies in the Pacific Northwest

By ROLAND G. GAMWELL

EDITOR'S NOTE.—The Pan-American and San Francisco Fairs in 1915 gave to many residents of eastern America the first occasion to realize the wonders both of nature and of man's making in the Far West. Many have known that the Pacific States were favored in rose-growing; but that there has been organization of the rose-lovers was not realized. Mr. Gamwell tells of the situation, and also sets forth exactly the aims and the function of the American Rose Society.

SINCE receiving letters on the question of an affiliation of some sort between the American Rose Society and the amateur rose societies of the Pacific Northwest, I have corresponded with a number of the leading amateurs in the latter section in an effort to get their views. All seem highly gratified, and I might almost say flattered, that the American Rose Society would desire such an affiliation. Possibly because we are so far away that our information is faulty, the general impression hereabouts has been that the American Rose Society was strictly an organization of commercial rose-growers, interested chiefly in the cut-flower end of the business, and hence not to be considered when the longing arose amongst the various amateur societies for a foster parent, in the way of a general organization, that might collect and disseminate rose-growing facts and information and experience.

A prominent rosarian from Portland, Ore., writes, "I am surprised to learn that the American Rose Society admits amateurs to membership." Another one from the state of Washington, writes, "You might tell the American Rose Society that one of the best things it could do would be to introduce itself out this way. I don't even know how to become a member, or that I could do so." And this man has about 500 plants of choice roses—a garden in which even a professional might revel. Another friend writes me, "There is much that an American national society could do for rosarians. At present we have to go to Europe for information even about roses that are produced in our own country."

When this need for general association was first felt by the individual, it was satisfied by the formation of small local societies, at the meetings of which there was open discussion

of questions of common interest. Within the last two or three years, however, a need has been felt for a general organization, capable financially, as well as educationally, of greater service to the amateur. It has not been the object of the local societies to accumulate money in their treasuries. Thus, the annual dues are but nominal, and the admission to the various exhibitions so low as not to prevent the attendance of the laborer or his family who love roses.

To satisfy the desire for a general organization the rosarians of the Puget Sound Basin got together a couple of years ago and organized the Pacific Northwest Rose Society. The objects of this Society are to encourage the amateur rose-grower, to enthuse the smaller local societies, to standardize their efforts, particularly in the way of exhibitions, and to give an annual rose show in some city in the district, open to amateur exhibits from the Pacific Northwest, and thus encourage quality and variety of roses, as well as quantity. Two exhibitions have been held under the auspices of the Pacific Northwest Rose Society, both in Seattle because of its central location, but with entries from gardens as far remote as 130 miles.

Nearly every town of importance in western Oregon and Washington has a local rose society, and the rose enthusiast can visit a succession of rose shows, from the latter part of May until nearly the middle of July, following the blooms as they open.

I am writing this on December 21, the anniversary of the day when our Pilgrim Fathers landed on a "stern and rock-bound coast" where today the newspaper despatches tell us the coast is not only "stern and rock-bound" but snow and ice-bound as well; and yet on my desk is a Richmond rose, picked this morning in my garden, and almost as fine as though the time were June instead of December.

We are hungry for information, and if such lessons as we have learned ourselves would be of interest to others, we would welcome a chance to give others the benefit of them. We want literature that is educational and inspirational.

It is the large amateur interest and enthusiasm that would make possible the realization of the aim of your Society, borne upon its seal: "A rose for every home, a bush for every garden."

Cut-Flower Rose-Growing

EDITOR'S INTRODUCTION

To the florists who have so perfected the growing of roses at all seasons—no longer properly called “forcing”—is due the high standard of accomplishment in form, color, fragrance, foliage, stem and “habit” now thoughtlessly accepted as conventional. It is a far cry from the old Niphetos and Safrano of a generation ago to the Ophelia and Radiance of today, and every step of the way is paved with patient trials, with discarded varieties. The amateur who is but now awaking to rose possibilities has had the way smoothed for him by the pioneers who have proved their faith in the rose by their works with it.

It is fitting, therefore, that in this American Rose Annual, devoted to the rose as the universal American plant, there should be set forth the views of leaders in cut-flower rose-growing; leaders who have “made good” in what may properly be termed scientific rose-growing—for what is science but orderly, thoughtful progress toward high ideals? These leaders, too, are those who see coming the larger use of the rose in the garden, and are working patiently in that direction. They, too, are the men who have prepared The American Rose Society for its larger usefulness.

The Future of the Commercial Growing of Roses for Cut-Flowers

By WALLACE R. PIERSON, Cromwell, Conn.

THERE is a distinction made between the forcing of roses and the growing of roses for cut-flowers. This distinction is brought to mind when one remembers that roses for growing in pots are forcing roses, and that the phrase “forcing roses” has been brought down to us from the days when the only good roses to grow for cut-flowers were the Hybrid Remontant or so-called “perpetual” varieties, which were pushed into bloom in early spring or after having a dormant period.

Roses grown for cut-flowers are not forced in the strict sense of the word. Conditions are unnatural, of course, but are intended to be merely an improvement on natural conditions, and the crop is almost continuous. One cannot but wonder at the change in roses that has happened in the past few years; and to say that the rose-grower is inconsistent expresses it mildly. Production was the watchword a few years ago; today, quality of bloom seems to rule with many growers. It is certain that few of the greenhouse men know what the stock that is

offered for sale costs them. Were the cost carefully figured, there would no doubt be a decided change in the varieties grown on many commercial places.

Occasionally there are remarks made regarding roses "of cut-flower type, with long pointed buds that open perfectly at all seasons." It is a favorite advertising description, but true only in very few instances. I feel safe in saying that long buds on real commercial roses are in the minority, and I know that some of the most widely grown roses never open at all unless left on the plant. Under these varying conditions it is hard to summarize regarding the commercial roses of America.

There are a few things to which I wish to call attention, however, and in which many of the commercial rose-growers will bear me out. The public which buys is the first big and important consideration. The desire for that which is out of the ordinary is one of the strong factors in determining the value of new roses. Bringing such a variety to the attention of the buyer is an advertising problem. Such conditions exist, and those who know how to do it are making the most of it. A rose does not need to be "an improvement over existing varieties" in order to pay, but merely to be possessed of merit, and backed by salesmanship and proper advertising.

Where are the new roses that will make rose history? The answer comes from everywhere, and many times from unsuspected sources. There is the possibility of sports. Radiance has sported red, and there is also a shell-pink sport of Radiance—two good acquisitions. Killarney and its sports make a family all by themselves, and have, as a family, done more for the roses of America than any one variety or type of rose; for Killarney is a type which we do not have duplicated in growth or general characteristics. Ophelia came as a bolt from a clear sky, and England, as well as Ireland, has scored. We shall soon be hearing of Ophelia sports, as the general rule has been that any variety, grown long enough in quantity, will sport somewhere. The sports usually come at the same time in many sections of the country. Mrs. Charles Russell is a seedling that has changed growing methods and market conditions. Quality alone keeps Mrs. Charles Russell as a leader among the roses of America.

I have thus mentioned four different types of roses, for a purpose. Radiance is fairly free in flowering, strong in growth, with fair quality of bloom. As a plant it makes lots of wood but much of it goes blind. It is a free, easy grower; the best outdoor rose in America, and still a cut-flower rose of the markets. The Killarney family, with every shoot a flower, or practically so, is sparse of foliage and has flowers smaller than many, but a leader because of quantity produced. The color of Ophelia has a charm that cannot be denied. The variety is an easy grower and yet makes little blind wood. It holds its large, strong foliage well. It is a producer, and a type that is a general favorite. Mrs. Charles Russell is the winner when the flowers are staged in competition. It is a variety which commands the top price. Growers overlook its scarcity of production and its sparseness of foliage, and are satisfied with the top market price for something which will always be in demand because of quality, and because it never floods a market by its bloom profusion.

I have not mentioned the crimson and red roses, nor have I discussed the charm of the corsage varieties, such as Cecile Brunner, Perle d'Or and their kindred, but I have tried to show that there is no such thing as "type in commercial roses," and that the market is varied.

There are many good breeders of roses who are working on seedlings, and there are many useful sorts among the old varieties that will have to fight for recognition unless carried to the crest of the wave of approbation by some fortunate occurrence. There is only one way to know the value of a rose, and that is by trial; and this extends to having retailers who are in sympathy with new ideas and novelties in flowers to handle them. We may get our new roses from Europe, or we may find them here. One new rose that makes good repays the loss on several that do not make good, and the rose-grower who waits for the other fellow to solve his problem usually takes what the other fellow leaves.



A Review of the Standard and Newer Varieties of Roses for Forcing

By CHARLES H. TOTTY, Madison, N. J.

THE requirements of a rose that will make its mark as a forcing variety are so strict that while "many are called, few are chosen." There is an idea among amateurs that a forcing rose will not do well outdoors. This idea, for the good of the Rose Society and the craft in general, should be dispelled, because the Killarneys, which are grown today more than any other varieties, are among the very best for outdoor culture.

It was thought that when Killarney Brilliant was introduced it would take the place of the original Killarney, but this does not seem to have occurred. Killarney Brilliant in most sections shows a very decided predisposition to black spot, and a constitution lacking the vigor of the parent. In addition to this, some retailers claim their patrons prefer the color of the original Killarney, as the color of Brilliant is more harsh and not so easy to conform with furnishings and house decorations. The idea that any sort of color would do in any sort of room, providing the flowers were beautiful and fragrant, has been most effectually dispelled, as many customers are more thoroughly imbued with the knowledge of color-harmony than the florist himself.

Mrs. Charles Russell has won a deserved place at the top of the list in pink roses. Its wonderful keeping quality has made it a host of friends. It must be confessed that Russell is not "everybody's rose;" that is to say, it does better when grown by an expert and given expert treatment.

Another pink rose that is gradually pushing its way to the front, due in no small measure to its fragrance, is Lady Alice Stanley. This rose seems to do better when not grown so warm as other varieties. If grown too hot it is weak in the neck and the heavy flowers bend over. The beauty of a rose like Lady Alice Stanley in comparison with a rose of the Killarney type, is that it is an all-year rose; the flowers in summer-time have considerable size and solidity, and are of good marketable quality when Killarney is worthless.

Mrs. George Shawyer, among men who keep a careful record of their rose-cuts and the price obtained for same, per square foot, is a very prominent variety. The color is a beautiful shade of pink, and very popular. In many sections, however, it is disposed to mildew, and on that account is not so extensively grown as its merits would otherwise entitle it to be. The light pink sport of this rose, Mrs. F. F. Thompson, introduced last year, suffers with the parent also in this respect. Where Shawyer grows well, Thompson will do likewise, although it must be admitted that a light pink does not sell in quantity as easily as a darker shade. An excellent exception to this, perhaps, is the variety Ophelia, which seems to be everyone's favorite. Ophelia being of many shades, it occasionally passes as pink, yellow or white, according to the call the florist has at the moment. Ophelia is possibly the most popular pink rose at the present time, although with the usual fickleness of fashion, no one can long predict the popularity of any rose.

An acquaintance remarked to me recently that he thought My Maryland "was coming back," but my answer to him was "so far as I could see it had never gone very far away," at least in our market, which is New York, where one can always get as many My Maryland as may be needed. This rose, of course, needs the warm section of the house, a night temperature of 64° to 66° being not any too high.

The latest aspirants for popularity in the pink section are the roses Cleveland and Gorgeous. Cleveland is a glowing pink, just the color of the old Rose Queen, whose only fault was it could not be induced to grow. Cleveland is similar in color, having the same underlying orange-color at the base of the petals, which is necessary in either pinks or crimsons to hold the color under adverse conditions.

Gorgeous, like Ophelia, could hardly, perhaps, be classed as a pink, since the developed flower is a golden salmon flushed with rose. I feel that Gorgeous will have made a name for itself, another year.

The rose Prima Donna, which is being exploited as a new rose, was distributed years ago under the title Madam P. Euler. The American Rose Society should insist that this and roses of a like character be exhibited under their proper names,

since it is not fair to the distributor, the man who buys the original plants, or the country of its origin, to have them masquerading under these different names.

In white roses, the field seems to be left at present to the two Killarneys, White and Double White, with occasionally a grower who has a small crop of Kaiserin. White Shawyer does not have enough petalage, and will not compete with White Killarney. There are several types of Double White Killarney, all of which have more petalage than the original White Killarney, but growers claim they do not get enough return to offset the fact that Double White will not produce so many blooms per square foot as the single White. A good white rose today is, in the words of the poet, "a consummation devoutly be to wished."

In yellow roses, the palm must be accorded to Sunburst. It is always popular, sells on sight, and when grown on its own roots is very satisfactory. Recent reports indicate that there is a deeper yellow sport of Sunburst in existence that will soon be brought to light, and if this is so, it is a "find" indeed.

Lady Hillingdon, which does very well in some sections, will in one thousand flowers produce a more even color than will Sunburst, but it is not so large, does not have the petalage, and is more addicted to blind wood, all of which keeps it in second place to the sterling Sunburst.

Mrs. Aaron Ward, another yellow that many growers "swear by" is very good. In our section of New Jersey its only trouble is not getting a long enough stem. This is being overcome by growing grafted stock exclusively, and keeping the house at a high night temperature, which is understood to be the method of the most successful growers of this variety. Mrs. Aaron Ward always enjoyed a large measure of popularity, owing to the fact that it was extensively used for corsage bouquets before the advent of Cecile Brunner, and is still used to a certain extent this same way.

Red roses are perhaps the least satisfactory of all the colors. The demand for them is very strong in midwinter and almost nil in midsummer; therefore, it means that the crop has got to bring a great deal more money than pink or white roses of that season in order to have the grower "break even" on his invest-

ment. This works out all right during the one or two weeks around Christmas, but during the rest of the year it does not. One exception to this rule is Mrs. Francis Scott Key. This variety is very full, being crowded with petals, and on that account opens poorly in midwinter, but it more than compensates for that fact during the spring and summer months when the color is glorious and the blooms have substance enough to class it as the finest thing in its type. Mrs. Francis Scott Key is the best-keeping rose ever distributed, and that has found it many friends, since the buyers always come back asking for the rose that keeps. Its chief fault is lack of fragrance, but its wonderful keeping qualities more than compensate for this.

Richmond is still the most popular rose for Christmas; the color is just right, being wonderfully brilliant, while Hoosier Beauty and Hadley are a little too dark. Richmond's chief handicap is that it opens too quickly in the summer. Prince d'Arenberg is popular with some growers, and with others is practically useless. In this connection it is always well to know that because a rose does not do well in some sections, it does not follow that it is "no good" in all sections. Some good roses doubtless have been discarded owing to the fact that they have not been tried out in sufficiently varying conditions. The general-purpose rose which will do well in every soil, from sand to black heavy loam, is rare indeed. The variety Milady, for instance, while considered worthless by 90 per cent of the eastern growers, in some western sections, where the soil is black prairie loam, is doing wonderfully well.

In the crimson class, honors seem to be divided between Hadley and Hoosier Beauty. Some growers have already stated that Hoosier Beauty is too weedy in growth and are going to discard it, but they may prove entirely too hasty in their judgment. Hoosier Beauty, while not prolific in growth of foliage, is with us away ahead of Hadley, and does not show the predisposition to blind wood which is the weak spot in Hadley. The color, while a little dark, is more than offset by the wonderful fragrance, which is a particularly strong point in the favor of Hoosier Beauty.

The most popular of the miniature roses is Cecile Brunner, which has been known under the names of Mignon and Sweet-

heart, and other euphonious titles. It is light pink in color, a very strong grower, and is called a "profitable rose" by every grower who has handled it in any quantity. The same thing may be said of George Elger, the light yellow flowers of which are always attractive.

Irish Fireflame is a single rose, fiery crimson at the base, shading to orange-salmon. Of course, the flowers do not amount to much when fully opened, but in the bud state they are very attractive. There are several other single varieties that deserve a place with Fireflame, and I have no doubt they will be heard from later. Ulster Gem, a lovely yellow is one aspirant for popular favor this year.

There is no question but the large increase in the number of varieties grown today is responsible in a great measure for the increased demand manifested for roses over every other type of flower; but every once in a while it happens that, owing to the enthusiastic retailer, some other flower is temporarily found occupying the premier position. The public perpetually craves "new things." The Israelite of old devoted considerable time to hunting up new gods, and the modern American, at least in "flower worship," is in no way behind.

For years, the American Beauty, Bride, and Bridesmaid roses were the only roses in the market, and the people got tired of them, but today with the increasing list of new roses every year, there is a corresponding increase in the demand for flowers.

Commercial Rose-Growing

By JOHN WELSH YOUNG, Philadelphia

OUR President has requested an article on commercial rose-growing, and a request from this source commands instant obedience, as from the private soldier to his officer. I respond, not with thought of special fitness for the task, not in hope of teaching, but to show that each member of The American Rose Society is willing to contribute his share.

The future of commercial rose-growing in this country lies in varieties, in their culture, and in economy of production. Today we seem to have reached a high-water mark in produc-

tiveness for the moment at least; yet owing to low prices our growers' receipts are not so large as they were a few years ago. Too many flowers of the same varieties have had their effect.

Varieties that bloom less freely pay better. The search for those varieties that combine merit and beauty will take time and thought. A proper balance between the colors must be preserved, unless the grower is a plunger. A proper balance between the types is also worth considering. The hybrid perpetual cannot longer be considered, but the Tea and the Polyanthas deserve thought before all the space is given to the pink, the white, the yellow, the red, and the fancy Hybrid Teas.

The culture of the rose under glass will continue to progress in the future as steadily as it has in the past. The methods vary in the different sections of the country and are modified by the brains and industry of the growers. Cultural skill produces results that are simply wonderful and will always continue to do so. Any attempt to disregard the laws of Nature must result in failure. Every effort directed toward working with Nature courts success. The highest degree of success will come to the grower who is best able to work in harmony with Nature in the production of the rose.

Great possibilities for progress in the immediate future lies in economy of production. Cutting down of expenses will occur, not through lower salaries (we do not want to drive our most intelligent men and women to other fields of labor), but through the introduction of mechanical labor-saving devices wherever possible. What these devices may be is for brains to determine, aided by experiment.

Durable, well-built greenhouses of good size are economical; so too is the vacuum system of heating; and in many cases motor delivery of the product. What more will be developed in the future? Will automatic watering be successful indoors, as it is outdoors? Why cannot automatic ventilation be perfected to suit every requirement?

Will not mechanical contrivances save much labor in hauling soil, coal, and ashes? What future use can we make of electricity to reduce operating expenses? These and many other questions rightly answered will go far toward developing commercial rose-culture in the next decade.

The Growing of the Best Cut-Flowers

By WM. F. GUDE, Washington

WE prefer rose-houses of moderate width, of two-thirds span construction, and erected with the long slope of southern exposure, as we find these to give us the utmost possible sunlight during the short days of winter; and such houses, with proper piping, are in our experience much more easily heated. While we rely mostly on houses of this aspect to give us our finest blossoms, we have also produced very fine flowers in houses almost directly opposite, viz., those of even-span construction, and running as nearly north and south as could be, but requiring more piping and more fuel to maintain the proper conditions of heat in midwinter.

There is a great diversity of opinion with regard to the use of ground beds, or raised benches. We agree that raised benches will give best results during the winter months; but for all-year-round returns, we much prefer well-drained ground beds, as, with proper handling, these more than make up the difference in late winter, spring, and summer. In this vicinity, spring days and warm weather, as a rule, come early, and then the beds do not require the constant attention required by raised benches.

The soil for roses should be a rather stiff clay loam, with a good sod, and a sufficient porosity to allow the free passage of water. Our preparation of soil begins with fall plowing of the sod land, which is then left in furrow over winter, to permit of aeration, and so that the sod may become decomposed. As early as possible in spring, when dried off, we manure this with half-rotted cattle-manure, using about one-fourth of the entire bulk, and cross-plow deeply, discing and harrowing. Cultivation by harrow is still continued at frequent intervals, to keep the soil in fine mechanical condition, and ready for filling in houses, which with us commences immediately after Memorial Day. We aim to do the bulk of our planting during the month of June.

Of course, we carry over some roses two and three years, and some varieties even longer. Some ground beds of Rich-

mond we have carried five years, yet they are now exceedingly fine, carrying stems of 4 feet length and over. Other varieties, including American Beauty, Radiance, Mock, Taft, and Killarney are equally good, having blooms of a superior quality.

In the taking of cuttings for young stock, we find it pays to be careful to secure only the best of flowering wood. We generally make the cuttings of two eyes—especially Beauties—and obtain wherever possible, good heels, as we find these produce many more bottom shoots; and as these usually bear fine blooms, this, of course, means more money.

In propagation, we use in the bench a bottom of about 2 inches of coal-ashes, covered by 4 inches of good sharp sand from the pit. Cuttings are inserted with liberal spacing, fairly firmed and thoroughly watered in, after which the temperature of the sand is maintained at as near 66° as possible, while overhead it is kept quite cool, say 10° less. This, in a large way, prevents top-growth until cuttings are rooted, and is a nice help in the future development of the plants.

As to atmospheric conditions in the propagating-house, we keep at all times plenty of moisture, frequently damping down walls and walks, and the sand is kept well moist for the first two weeks—gradually reducing moisture until cuttings are rooted.

When rootlets are about $\frac{1}{2}$ to 1 inch in length, we pot into twos, using a stiff loam, screened fine, with no manure. These are shifted on as soon as ready; young stock must not be neglected. When repotting, we add some well-rotted manure, about one-fifth, and a 4-inch pot of medium ground bone to a barrow of compost. The young stock should be kept absolutely clean and free from spider and aphid at all times, and every effort should be made to keep it moving until planted.

At planting-time, the soil as previously prepared is hauled from the field and placed directly in the beds or benches, which are leveled full and partly firmed; and in planting we leave a small depression around each plant for watering, which is thoroughly done, only at the plant for some time.

When well established and growing nicely, we again level off the beds, and work in a fair dressing of fine bone, being careful not to go too strong, as we find a small quantity about every ten days much better than a larger dose less frequently.

In late August or early September, when the nights are getting quite cool, and the plants have made a good strong healthy growth, we feed, varying each time, using tankage, sheep-manure, and cattle-manure-water at intervals of ten days to two weeks.

We also use much air-slaked lime, but not less than a week before any other feed. Of this we give a liberal dressing and water in thoroughly, to destroy worms and other vermin.

When the season arrives at which we can maintain proper temperatures, for such varieties as American Beauties, Killarney, Ophelia, Russell, Ward, and others of that nature, we aim to keep 58° to 60° night, and 68° to 75° day temperature. Here again, as with fertilizing our advice is to be careful, and not overdo it.

We find Mock, Maryland, and Taft best suited at 62° to 64° night, and 70° to 80° day, and Radiance (both Pink and Red), Shawyer, Richmond, and Enchanter we keep at 56° to 58° night, 66° to 72° day.

Of course, during protracted cloudy dull weather we run somewhat cooler during the day, aiming at slightly above our normal night temperatures, with some air on.

A few pointers from practice may be of value. In using liquid manure, be sure the beds are well moist before applying, and be careful with the commercial fertilizers. Get the fires going early in cold weather, so as to have heat around before the sun is gone. Do not let rapidly growing roses get too dry, for they may stop, and they are not so easy to get going again.

If possible, we avoid fumigation and do as little syringing as is consistent with the proper cleanliness of the plants while the roses are in crop and cutting heavily; and we make an effort to go into crop free from fly and spider. When the crop is off we "go to it."

The Editor urges cut-flower growers to send to him at any time memoranda of interest for future issues of the Annual.

What the Wholesaler Looks for in the Handling of Roses as Cut-Flowers

By S. S. PENNOCK, President American Rose Society

IN the first place, every wholesaler who handles roses to market, wants his grower, whether large or small, to give him proper backing. In other words, he wants him to follow out any suggestions the commission man may make as to packing, shipping, or tending to the betterment of the business whether in the growing or the marketing end. If the grower is in entire harmony with the commission man, he will be benefited by these suggestions.

Each city has its different ways of marketing roses. Uniform grading ought to be adhered to, and The American Rose Society wants to establish, if possible, uniform lengths of grading and the names of those grades.

Every grower needs to be careful and conscientious in the grading of his roses, and not run in any "ringers." The grower who sends in uniform grades, day in and day out, the year round, is bound to be benefited in better returns for his stock, as the retailers will learn to depend on him, realizing that they want that man's goods, and not those of the grower whose shipments have some weak necks or poor flowers in a grade where they should not be put.

This is one of the most important points in grading. Many a grower will grow good flowers, and then spoil them in marketing them, either in the packing or handling. Too much care cannot be taken of the roses. After they are cut and before they are packed up for shipment to the wholesaler they should be well hardened by allowing them to stand in water in a cool place at least five to ten hours. They will then reach the wholesaler in good salable condition; otherwise they may be wilted, and show the effects of handling much more quickly, becoming more easily bruised or discolored.

Some cities want their roses bundled twenty-five in a bundle; others want them laid out on a paper—twenty-five or fifty on a paper. In either case, they need to be plainly marked with the grades, number of blooms, and growers' numbers. One method

has its advantages over the others, governed entirely by market conditions.

Another thing that every grower wants to be careful about, and that is to make shipments at a time that will reach the wholesaler when he feels he can get the best returns out of the shipment. Usually the early shipments fare better than the shipments which come in later in the day—as the old saying goes, “The early bird catches the worm.”

Every grower will facilitate matters very much indeed by giving the wholesaler notice as to what the probable crops will be, so the latter may take advance orders, and advertise, thus disposing of the stock to mutual better advantage.

When it comes to growing new varieties, every grower is anxious to know what the possibilities are. If the wholesaler is sincere and wants to help the grower, he will give the latter his views to the best of his knowledge, and not try to mislead him in any way. Of course, both the grower and the wholesaler may be mistaken as to the future of any new variety: it is opinion, in any event, and not experience, that they are both going on.

As I said previously, to make a success of any business, both the producers and handlers must work in harmony and pull together.



A Partial List of American Hybridized Roses, with Parentage and Date of Introduction so Far as Ascertainable.

IT should be borne in mind that this list is but a beginning. Accurate information has been diligently sought, but is hard to obtain. The Editor will thankfully acknowledge additions or corrections, addressed to him at Harrisburg, Pa.

It will be noted that "sports" are not presented in this list. In another issue of the Annual, it may seem wise to include them.

Abbreviations used below are H. T. for Hybrid Tea; T. for Tea; H. P. for Hybrid Perpetual; H. Ru. for Hybrid Rugosa; H. W. for Hybrid Wichuriana; H. Mult. for Hybrid Multiflora.

ROSES HYBRIDIZED BY JOHN COOK

SOUVENIR OF WOOTTON, H.T. 1888. Bon Silene × Louis Van Houtte.

Said to be the first Hybrid Tea rose raised in the United States.

MARION DINGEE, H.T. 1889. Caserta × General Jacqueminot.

MRS. ROBERT GARRETT, H.T. 1900. Caserta × F. E. Verdier.

ADMIRAL SCHLEY, H.T. 1901. Colonel Joffe × General Jacqueminot.

Received Bronze Medal at Pan-American Exposition.

ENCHANTER, H.T. 1903. Mme. Caroline Testout × Furon.

CARDINAL, H.T. 1904. Liberty × unnamed red seedling.

MY MARYLAND, H.T. 1908. Madonna × Enchanter.

RADIANCE, H.T. 1908. Enchanter × Cardinal. Awarded American Rose Society's Silver Medal, 1914.

PANAMA, H.T. 1913. Dreuschia × unnamed pink seedling. Awarded American Rose Society's Silver Medal.

FRANCIS SCOTT KEY, H.T. 1913. Radiance × No. 411 (an unnamed crimson seedling).

ROSES HYBRIDIZED BY E. G. HILL

GENERAL MACARTHUR, H.T. 1904.

MRS. THEODORE ROOSEVELT, H.T. 1904.

RICHMOND, H.T. 1905. Lady Battersea × Liberty.

DEFIANCE, H.T. 1907. Lady Battersea × Gruss an Teplitz.

RHEA REID, H.T. 1908.

MAY MILLER, H. T. 1910.

MAYFLOWER, T. 1910.

ROSE QUEEN, H.T. 1911.

ALICE LEMON, H.T. 1911.

ROBERT HELLER, T. 1911.

RENA ROBBINS, H.T. 1911. Paul Neyron × Mme. J. Guillemot.

ROBIN HOOD, H.T. 1912.

LIST OF AMERICAN HYBRIDIZED ROSES 125

ROSES HYBRIDIZED BY ALEXANDER W. MONTGOMERY, JR.

- WELLESLEY, H.T. 1905. Liberty × Bridesmaid.
CRIMSON QUEEN, H. T. 1912. Liberty × Richmond × Gen. MacArthur.
MRS. CHARLES RUSSELL, H.T. 1913. "Mme. Abel Chatenay, Marquise Litta, Mme. Caroline Testout, Mrs. W. J. Grant, General MacArthur and three seedlings resulting from these crosses are all combined to produce Mrs. Charles Russell."
HADLEY, H.T. 1914. Liberty × Richmond, the resulting seedling × General MacArthur. Awarded Gold Medal American Rose Society, 1914.

ROSES HYBRIDIZED BY DR. W. VAN FLEET

- ALBA RUBRIFOLIA, H.W. 1898. *Wichuraiana* hybrid.
AMERICAN PILLAR, H.W. 1902. *R. Wichuraiana* × *R. setigera*.
BIRDIE BLYE, H.W. 1904. Everblooming *Wichuraiana* hybrid.
CHARLES WAGNER, H.P. 1904. Jean Libaud × Victor Hugo.
GARNET CLIMBER, H.W. 1907. *Wichuraiana* hybrid.
MAGNAFRANO, H.T. 1905. *Magna Charta* × Safrano.
MAY QUEEN, H.W. 1898. *Wichuraiana* hybrid.
NORTHERN LIGHT, H.W. 1898. *Wichuraiana* hybrid.
PHILADELPHIA, H. Mult. 1904. Multiflora hybrid.
NEW CENTURY, H. Ru. 1900. *R. rugosa* × Clothilde Soupert.
SIR THOMAS LIPTON, H. Ru. 1900. *R. rugosa* × Clothilde Soupert.
RUGOSA MAGNIFICA, H. Ru. 1905. *R. rugosa* × Ards Rover.
RUBY QUEEN, H.W. 1899. *Wichuraiana* hybrid.
SILVER MOON, H.W. 1910. *R. Wichuraiana* × Cherokee rose.
DR. W. VAN FLEET, H.W. 1910. *R. Wichuraiana* × President Carnot.
MARY LOVETT, H.W. 1915. *R. Wichuraiana* × Frau Karl Druschki.

ROSES HYBRIDIZED BY JACKSON DAWSON

- DAWSON, H. Mult. 1890. *R. multiflora* × General Jacqueminot twice.
MINNIE DAWSON, APPLE BLOSSOM and IDA are hybrid climbers resulting from Dawson crossed with *R. multiflora*; not formally introduced.
W. C. EGAN, H.W. 1900. *R. Wichuraiana* × General Jacqueminot.
DAYBREAK, H.W. 1909. *R. Wichuraiana* × *R. indica carnea*.
FARQUHAR, H.W. 1903. *R. Wichuraiana* × Crimson Rambler.
SARGENT, H.W. 1910. *R. Wichuraiana* × Crimson Rambler × Baroness Rothschild.
LADY DUNCAN, Creeper, H.W.-Ru. 1909. *R. Wichuraiana* × *R. rugosa*.
ARNOLD, H. Ru. 1914. *R. rugosa* × General Jacqueminot.

ROSES HYBRIDIZED BY HOOPES, BRO. & THOMAS CO.

- COLUMBIA, H.W. 1903. Unnamed seedling × Mme. Caroline Testout.
CHRISTINE WRIGHT, H.W. 1909. Unnamed seedling × Mme. Caroline Testout.
CLIMBING AMERICAN BEAUTY, H.W. 1909. Unnamed seedling × American Beauty. Silver Medal American Rose Society, 1915.
EDWIN LONSDALE, H.W. 1903. *R. Wichuraiana* × Safrano.
PURITY, H.W. Unnamed seedling × Mme. Caroline Testout. Silver Medal American Rose Society 1915; not yet introduced.
PROF. C. S. SARGENT, H.W. 1903. *R. Wichuraiana* × Souvenir de Auguste Metral.
ROBERT CRAIG, H.W. 1903. *R. Wichuraiana* × Beaute Inconstant.

CLIMBING ROSES HYBRIDIZED BY W. A. MANDA

EVERGREEN GEM, H.W. 1899. *R. Wichuraiana* × Mme. Hoste.
 GARDENIA. H.W. 1899. *R. Wichuraiana* × Perle des Jardins.
 JERSEY BEAUTY, H.W. 1899. *R. Wichuraiana* × Perle des Jardins.
 PINK PEARL, H.W. 1901. *R. Wichuraiana* × Meteor.
 WHITE STAR, H.W. 1901. Jersey Beauty × Manda's Triumph.
 CRIMSON ROAMER, H.W. 1901. Bardou Job × Jersey Beauty.

ROSES HYBRIDIZED BY M. H. WALSH

(These roses are presumed to be mostly hybrids between *R. Wichuraiana* and certain Polyantha varieties. The parentage has not been published, and is not at this time ascertainable.)

The following are Hardy Climbers, introduced by Mr. Walsh within the past sixteen years:

AMERICA	EVANGELINE	MILKY WAY
ARCADIA	KALMIA	MINNEHAHA
BABETTE	LADY BLANCHE	PARADISE
BONNIE BELL	LUCILE	SNOWDRIFT
CARISSIMA (H.W. 1905)	LA FIAMMA	SUMMER JOY (1911)
CINDERELLA	LADY GAY (1903)	SWEETHEART
COQUINA	MAID MARION	TROUBADOUR (1911)
DEBUTANTE (1900)		

The following Climbers of Mr. Walsh's hybridization have received honors from the American Rose Society:

URANIA (1902). Special Newbold Fund Prize.

DELIGHT (1904). Certificate of Merit.

HIAWATHA (1904). First prize.

EXCELSA (1908). Hubbard Gold Medal, 1914. (See colored frontispiece.)

MRS. M. H. WALSH (1911), Gold Medal, 1911.

MISCELLANEOUS INTRODUCERS

MILADY, H.T. 1913. Edward Towill—Richmond × J. B. Clark.

WILLIAM R. SMITH, T. 1908. Peter Henderson & Co.

HOOSIER BEAUTY, H.T. 1915. F. Dörner & Sons Co.

LITTLE SUNSHINE, Polyantha. *R. multiflora nana* × Soleil d'Or. Registered American Rose Society, 1915 by A. N. Pierson, Inc., Hybridized by Alexander R. Cumming, Jr.

DEFIANCE, H.T. Registered 1914, by Edward Kress. "Cross between Gruss an Teplitz and Etoile de France."

WEST GROVE, H.T. Registered 1914, by Dingee & Conard Co. Liberty × Kaiserin Augusta Victoria.

MRS. MOORFIELD STOREY, H.T. Registered 1915, by Waban Rose Conservatories. General MacArthur × Joey Hill.

The Work of The American Rose Society

The Annual Meeting, in Boston, Mass., March 19

THE sixteenth annual meeting was called to order after a dinner at the Parker House, where the Society met by invitation of the Massachusetts Horticultural Society. The guests were welcomed by the Mayor of the city, Hon. Jas. F. Curley; the toastmaster of the dinner, Mr. Patrick Welch, of Boston; and President Wallace R. Pierson, of Cromwell, Conn. The President's, Secretary's and Treasurer's reports were read, as hereafter presented. The Treasurer stated that in his ten years of service at no time had so large a cash balance been in the treasury as at present.

The reports of the three officers were received with applause.

Mr. Alexander Cummings, Jr., Chairman of the Central Test-Garden Committee, read his report, and Mr. Mulford, of Washington, reported concerning the Washington Test-Garden that the grounds as laid out were in a fine location, readily accessible; that the quantity of material received was liberal so far, but that considerable more might be used to advantage, and that efforts would be made to make it a real addition to the public service, while any support that The American Rose Society would give would be appreciated.

Prof. A. C. Beal, of Cornell University, Chairman of the Cornell Test-Garden Committee, reported the progress there as most encouraging.

The next business in order being the selection of a place of meeting for the 1916 session, Mr. Wm. F. Gude, of Washington, spoke of the importance of the National Flower Exhibition to be held in the city of Philadelphia in 1916, and moved that The American Rose Society accept the invitation already extended to its Executive Committee. The motion was unanimously adopted.

The President read a letter from Frank A. Friedley stating that the Cleveland Flower Show would occur in November; that one of the days had been set apart as a rose day, with a prize list of \$700; and that The American Rose Society was invited to assume charge of the rose exhibition. Upon motion, the President was directed to appoint a committee to represent the Society. He named as Chairman of the Committee, Mr. W. G. Bates, Cleveland, O., to act with Messrs. L. L. Lamborn, Alliance, O., and E. B. George, Painesville, O.

The nomination and election of officers for the ensuing year was then proceeded with, with the result that the following were unanimously elected: President, Samuel S. Pennock, of Philadelphia; Vice-President, Louis J. Reuter, of Westerly, R. I.; Secretary, Benjamin Hammond, of Beacon, N. Y.; Treasurer, Harry O. May, Summit, N. J.

The Executive Committee was completed by the addition to it, in connection with the reelection of Robert Simpson, of the retiring Presi-

dent, Wallace R. Pierson, and of Messrs. Robert Pyle for one year, and Eber Holmes for two years.

President Pierson brought up the matter of the desirability of so amending the by-laws that the retiring President should become a member of the Executive Committee for the term of one year. After some discussion, it was agreed that a resolution recommending an amendment to the by-laws making the retiring President a member of the Executive Committee for the year following his retirement be brought up at the next annual meeting.

In view of the fact that The American Rose Society had 104 members in good standing in the Society of American Florists, it was on motion decided that The American Rose Society shall affiliate with that organization, and that in accordance with its rules, the President of The American Rose Society be directed to accept a seat in the Board of Directors of the Society of American Florists.

President Pierson called attention to the matter of a proposed standard for the growing of commercial roses which had been discussed in the annual meeting of 1911. Mr. S. S. Pennock spoke upon the desirability of adopting a standard method of designating cut blooms for commercial sale. After discussion, the President was authorized to appoint a Committee on Standardizing Commercial Rose-growing, to act in conjunction with the Executive Committee, and to report at the next annual meeting. He named on this Committee Messrs. S. S. Pennock, Patrick Welch, and Frank A. Friedley.

The Society then adjourned to meet at San Francisco in August, in connection with the Annual Meeting of the Society of American Florists.

BENJAMIN HAMMOND, *Secretary*.

PRESIDENT WALLACE R. PIERSON'S ADDRESS

I make this formal address with mingled feelings of satisfaction and regret. It is gratifying to me to think that, in the two years during which I have served as your President, much has been accomplished to carry out the principles which The American Rose Society established as its aim when framing its constitution. It is to be regretted that the work has not been carried nearer to completion, but the foundation has been laid and the advancement of the Society is certain.

As a society our aim has been to foster the love of roses, whether as cut-flowers or as blooming plants; to stimulate that love of roses for the specimen, trained and brought to perfection by artificial heat; and to kindle in the heart of its admirers a love for the rose in the garden.

To reach the people we must go outside the ranks of professional rosarians, and this is what we have attempted to do. We who have labored hard to achieve the desired end are gratified to state that the Syracuse Rose Society, the Newport Garden Club, and the Newport Garden Association are now affiliated with us and we are hoping that similar societies may be added to this list to aid us in the work. Our Bulletin goes to each member of these organizations, and that Bulletin must be made of greater

assistance to the amateur. Our medals go to these societies, to be awarded at their exhibitions. This must be an inspiration to the individuals who compete for them, and the giving of these medals is one of the finest tributes that The American Rose Society can pay to the skill and success of a rose-lover.

The shows of these amateurs are of roses grown out-of-doors, and they are successful. Do they not show us the way to fulfil the obligations of our constitution? For, gentlemen, we plainly state in our constitution, that a show shall be given at a date later than March, to recognize the garden rose. Such an exhibition can be held and be a credit to our Society, and I should suggest that in the event of such a show being held, premiums for professionals in the form of cash be dispensed with and that all awards be of medals and ribbons. Those who use our American Rose Society's exhibition for advertising, showing flowers grown in the open ground, are not sacrificing great commercial values such as are represented by the March shows, and the advertising is ample to repay the effort. For the amateur, cash premiums would seem advisable.

In the way of advancing interest in garden roses, the work of The American Rose Society, in conjunction with the Department of Agriculture and Cornell University, in forming the two large trial-gardens, is highly commendable. They are the beginning, and in leaving the position with which you have honored me, I commend to my successor the importance of the rose trial-gardens. That these gardens may become the beacons of light along the path of the amateur and a consistent and dependable guide to those of us who deal in garden roses, is my most earnest desire. Let them determine for us and for the people the intrinsic values of the different varieties. Let them give us the relative values of plants on their own roots, budded or grafted on Manetti, Brier, or other stock. Let them tell us how they stand the cold northern winters, and they will have served us well, but they will also serve us by being an inspiration to the thousands who will visit these gardens annually. Let us give our assistance in every possible way and leave no stone unturned to make these gardens a grand success. They may easily become a credit to The American Rose Society and to all concerned.

The work of the Central Rose-Garden Committee should be in a measure concentrated on the introduction into these gardens of the novelties of Europe as well as of America. I would suggest that any firm buying foreign roses impress upon these firms the importance of sending their novelties, giving the American public and rosemen the chance to buy upon proved merit instead of printed descriptions.

I wish to call to your attention that action of our Society upon the classification and grading of cut roses would be a worthy procedure.

I appreciate the honor with which you favored me and am grateful for the loyalty shown by the Executive Committee. I trust my interest and loyalty can be depended upon and I shall be always ready and willing to help The American Rose Society carry forward the slogan: "A rose for every home, a bush for every garden."

SECRETARY HAMMOND'S REPORT

Ten years ago, in this city, the present Secretary assumed the duties of his office, and during the decade that has elapsed there has been a substantial development in the growth and influence of The American Rose Society, because each one has helped.

From its start the aim has been to increase general interest in rose-cultivation, and to improve the standard of excellence of the rose for all the people. Every year, able men have done much to increase the usefulness of the Society.

The past year has seen the culmination of efforts to provide test-gardens for roses in various geographical locations. In Hartford, the municipal rose-garden in Elizabeth Park attracted much attention, which stirred up efforts in other directions, resulting in the starting of a national rose-garden in Washington; while at Cornell University in Ithaca, in an ideal region for outdoor roses, there is now a garden which, if it is pushed with energy, will soon become as famed as are some of the choicest spots in Europe. In Minneapolis, in Lyndale Park, is a rose-garden that has demonstrated what can be done where the winters are sharp and long, and the result as seen there is a credit to the man whose genius has created it.

The effort of The American Rose Society is to have and affiliate with it every local society that conducts an annual rose show, and to encourage such exhibitions by distribution of its medals. The past year the strong rose society in Syracuse has affiliated with the American Rose Society. It has 266 members. In Newport, R. I., two organizations have joined the Society, viz., The Newport Garden Club, and the Garden Association.

The Bulletin of the past year, giving a record of some of the work accomplished, is a publication of value. It gives accurate illustrations of the rose-gardens at Washington and Cornell; it presents articles from California and Oregon bearing upon the subject of rose adaptation, a subject of interest and value to every commercial rose-grower, not only in America but in Europe as well, because America is a great rose market for imported roses.

The past three years The American Rose Society has been greatly assisted in its premium list by the associations with whom its main exhibition has been placed. No one connected with The American Rose Society in an official way accepts any compensation whatever, either for time or effort given.

The standard scale of points, as adopted by The American Rose Society has been accepted in various parts of the country. The judgments as made on the basis of this scale, upon either plants or blooms, by the able men who have acted in judging the various points of value, have gained the confidence of local associations.

A society like The American Rose Society, with membership in all parts of the country, has a patriotic as well as a commercial value. The past year more medals were distributed than ever before, and last year was the first time that the five-year limit covering the Mrs. Gertrude M. Hub-

bard fund was reached. This medal went to Mr. M. H. Walsh, of Woods Hole, Mass., for his climbing rose, *Excelsa*,* while a close competitor for the honor was the well-known rosarian, Mr. John Cook, of Baltimore, Md., with his fine rose, *Radiance*.

It is the hope of the Society to see its membership largely increased; to see the spirit of affiliation take a wider form, and to see rose test-gardens established in many sections.

Our finances are in fair condition. The life membership fund has grown until it is \$3,150, which is held as a permanent fund. The larger this permanent fund is, the stronger the American Rose Society will become.

BENJAMIN HAMMOND, *Secretary*.

TREASURER MAY'S REPORT FOR YEAR ENDING MARCH 16, 1915

RECEIPTS

Balance on hand March 16, 1914	\$953 73
Dues from individual and affiliated members, directly and through the Secretary	432 40
Advertising in Bulletin	165 91
Premiums for exhibitions	155 00
Interest on mortgage certificates	150 00
Interest on permanent fund	13 95
Interest on current balance	14 90
	<hr/>
	\$1,885 89

DISBURSEMENTS

Printing of Bulletins, stationery, etc.	\$381 40
Engravings	33 00
Premiums for exhibitions	35 00
Medals, engraving, etc.	130 44
Sundry expenses of Secretary, postage, etc.	87 76
	<hr/>
	667 60
Balance on hand	1,218 29
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	\$1,885 89

(Out of the balance on hand will be paid the expenses accruing for premiums, annual exhibition, etc.)

INVESTMENT ACCOUNT

West Chester and Bronx Title and Mortgage Guaranty Co. Three mortgage certificates	\$3,000 00
Summit Trust Co. Permanent Fund	150 00
Hubbard Medal Fund	250 00

HARRY O. MAY, *Treasurer*.

*See Frontispiece.—EDITOR.

The San Francisco Meeting, August 19, 1915

The meeting of The American Rose Society duly chronicled to be held during the convention of the Society of American Florists and Ornamental Horticulturists in San Francisco, occurred on August 19, in the Civic Auditorium. Mr. Robert Pyle, of West Grove, Pa., acted as Chairman. A number of members were present and many California people also attended.

The Chairman congratulated those present on behalf of The American Rose Society on the favorable conditions existing upon the Pacific Coast for rose-growing. The Pacific Coast from the extreme south of California to Vancouver is natural ground for roses, and in the vicinity of Los Angeles the main highways have trellises upon which are grown climbing roses to a notable effect.

Mr. Pyle spoke particularly upon the desirability of increasing the number of affiliated societies, and Prof. A. C. Beal of Ithaca, N. Y., spoke also upon the same subject. Mr. F. L. Mulford, of the Department of Agriculture, told in some detail of the rose societies at Portland, Ore., and at Tacoma, Wash.

Owing to the great attractions existing at the Exposition grounds but little business was transacted, and the Society adjourned to meet at Cleveland in November.

BENJAMIN HAMMOND, *Secretary*.

The Cleveland Meeting, November 11, 1915

In connection with the Cleveland Flower Show, a meeting of The American Rose Society was held on Thursday evening, November 11, with President Pennock presiding.

The Secretary brought up the question of the registration of new roses appearing as sports from established varieties. A discussion followed, participated in by Messrs. Dunlop, Pierson, Reuter, and others. It was finally decided that sports proposed for registration as new varieties should in each case be carefully examined, in order to avoid the acceptance of a rose not sufficiently distinct from a recognized variety.

Judges appointed, Messrs. Buettner and Dunlop, reported upon five undissemminated varieties entered, submitting the following score of points:

	Tipperary	Red Radiance	Gorgeous	Mrs. W. R. Hearst	Mrs. Bayard Thayer
Size	6	8	9	9	9
Color	14	17	16	18	18
Stem	13	12	12	13	15
Form	13	12	13	13	14
Substance	8	7	8	8	9
Foliage	13	14	13	14	13
Fragrance	2	3	4	4	4
Distinctiveness .	5	8	8	8	8
Total points	74	81	83	87	90

The Cleveland Flower Show was attended by thousands of people, and one of the noted incidents was the attendance of the school children as guests of John D. Rockefeller. The exhibits of roses from various places were most beautiful.

President Pennock brought up the matter of special prizes for a rose-garden display at the Philadelphia Show. Mr. Philip Brietmyer of Detroit, Mich., urged that the garden competitions provided a valuable attraction at a large show. This brought out an interesting discussion, participated in by Messrs. May, Reuter, Dunlop, Pennock, Buettner and Dailedouze, and ended in the recommendation that a garden display be fostered. Mr. Brietmyer renewed his offer of \$200 for or toward a first prize.

Mr. Eugene Dailedouze proposed that Mr. R. Witterstaetter be elected as a life member, which was duly done with much satisfaction.

The rule concerning pinches* on roses for display was brought up by Mr. Wallace R. Pierson, and amended to read as follows:

"All roses shall be disqualified where exhibited with more than two growths—one pinch, except in classes calling for displays, and for 100 or more blooms in one vase, on which two pinches are allowed."

A letter from Rev. George Schoener was read, expressing his appreciation for the kindly remembrance and substantial gifts received, following the destruction by fire of his home and rose garden.

Mr. Wallace R. Pierson gave an account of roses grown in Oregon from varieties mainly from Pasadena and vicinity.

BENJAMIN HAMMOND, *Secretary.*

Dedication of the National Rose-Garden at Washington, June 2, 1915

The meeting of members of The American Rose Society, officials of the Department of Agriculture, and visitors, in the Hall at 1214 F Street, N. W., was called to order by Mr. William F. Gude, who, after deprecating the rainy day, and announcing an arrangement to proceed to the rose-garden at Arlington and to visit later Twin Oaks, the residence of Mrs. Charles J. Bell, for an inspection of her rose-garden, introduced Mr. Wallace R. Pierson, President of The American Rose Society.

Mr. Pierson, after briefly describing the origin and success of the rose trial-garden at Elizabeth Park, Hartford, Conn., and mentioning the circumstances surrounding the arrangement for a national rose-garden, asked Mr. Robert Pyle, as Chairman of the Washington Trial-Garden Committee, to take charge of the meeting.

Mr. Pyle, in a few well-chosen words, presented the desirability of a formal commemoration of the dedication, or christening, of this National Rose-Garden. He then introduced Hon. Louis Brownlow, a Commissioner of the District of Columbia, who formally welcomed the visitors to

*It may be explained to the uninitiated that in rose-growing a "pinch" means that the original flower-bud has been pinched off, to stimulate size and strength.—EDITOR.

the nation's capital, expressed the hope that the Garden would soon become a show place, and assured them that the authorities of Washington had every disposition to help in the beautification of the city, as well as in the extension of its usefulness to the people of the United States.

Following the welcome by Commissioner Brownlow, the Chairman called upon Mr. Wallace R. Pierson to present the rose plants supplied through The American Rose Society for the beginning of the National Rose-Garden. In so doing, Mr Pierson made a brief address in course of which he said: "We believe that the rose is a home-builder, that it tends to the upbuilding of moral character, and to the enlightenment of mankind."

Dr. William A. Taylor, Chief of the Bureau of Plant Industry, on behalf of the Secretary of Agriculture then accepted the gift of roses "in the spirit in which it was given, and in the belief that through the care and development of this collection the common good will be helped." Mr. Taylor, in continuing, spoke of the Agricultural Department's attention to "the problems involved in the production of food and raiment," expressing the belief that the Department has now reached a point when it is realized that "food and raiment are but the beginning of real life, and that there is need for the development of beauty as well as for the raising of food," in order to "improve the home environment, and to stabilize the home." In conclusion, Mr. Taylor said:

"So, speaking for the Secretary of Agriculture, I accept for the Department your gift, and trust that the use the Department makes of it, the care it takes of this Garden, and the facilities for observation and study that it affords to the public, will justify your generosity."

At the request of the Chairman, Mr. F. L. Mulford, Landscape Gardener of the Department of Agriculture, explained in detail the design of the Rose-Garden, urged the importance of checking up the varieties, of providing suitable labels, and of extending the number and varieties of roses in the collection.

Prof. L. C. Corbett followed with an interesting statement as to the laying out of the Garden as part of the Arlington Farm, and as to the history of the Farm, which he had developed since 1901 from a most unfavorable condition to its present advantageous shape. He pointed out that "the Farm now serves as a field laboratory for more than twenty offices and bureaus of the Department of Agriculture."

Chairman Pyle then called upon Dr. W. Van Fleet, who made an interesting address, in line with his paper presented elsewhere in this Annual.

In continuing the discussion of the introduction of new roses, the Chairman called upon Mr. David Fairchild, Explorer for the Department of Agriculture, who told of the Department's activities abroad, and described a number of new roses to be imported from northern and western China for planting in the Garden at Arlington. He spoke particularly of the Chinese *Rosa Xanthina*, a perfectly hardy light yellow rose, which has stood 20° below zero without being harmed. Another very early yellow rose is *Rosa Hugonis*, a representative of western China. "These two roses," he said, "have fired my imagination more than anything else that I have had anything to do with."

The Chairman then called upon Mr. George Field, Mr. Benjamin Hammond, and Mr. Peter Bisset, each of whom added to the value of the occasion in appropriate remarks. Dr. A. Patten was introduced and in a few words described the successful exhibitions held for several years by the Brookland Rose Society, within the District of Columbia.

In concluding the session, Mr. William F. Gude was asked to speak. He said of the National Rose-Garden, in part:

"Dedicated and presented by The American Rose Society, and accepted by the United States Government, a start is well made. Welcomed by a Commissioner of the District of Columbia, we have been witnesses at the beginning of an epoch in the history of The American Rose Society that should endure until time shall be no more."

Following the adjournment of the formal meeting, those present visited "Twin Oaks," where they were personally received by Mrs. Charles J. Bell. The visit was much enjoyed, and particular interest was shown in the blooms of a yet undisseeded pink climber, grown on the estate by Mr. Bisset, and named for Mrs. Alexander Graham Bell.

Registration of New Roses in 1915

On May 2, according to the rules and regulations, a new rose was registered by Messrs. Weiland & Risch, of Chicago, Ill., as follows:

Champ Weiland. H. T. A sport of Pink Killarney, originating in our establishment at Evanston, Ill., and under deepest scrutiny for the past three seasons. Buds large and full; color a bright clear glistening pink; inner and reverse side of petals identical and fadeless. More free than the parent, and more sweetly scented. Foliage of a glowing reddish character persisting from planting time to end of season. It may be said that this rose represents a distinct advance over any of its predecessors.

On July 20, the Waban Rose Conservatories, Natick, Mass., presented for registration two new roses, which were duly accepted, as follows:

Mrs. Bayard Thayer. H. T. A sport from Mrs. Charles Russell; flower is large and full; color, outside of petals deep rose, inside clear silver-pink; foliage large and very dark green, perfectly flat, having no tendency to curl, as is sometimes the case with Mrs. Charles Russell.

Mrs. Moorfield Storey. H. T. A seedling of Gen. MacArthur × Joey Hill; a large, full rose with heavy, dark foliage; color shell-pink, deeper toward the center, tip of petals deep rose.

On December 13, A. N. Pierson, Inc., Cromwell, Conn., presented for registration and had duly accepted, the following three new roses:

Mrs. Wm. R. Hearst. H. T. A sport from My Maryland, with the same productive habit of growth and freedom of flowering. In color, a clear, dark pink, a shade resembling Bridesmaid, and a decided improvement on the parent.

Red Radiance. H. T. A sport from Radiance; similar in habit and growth, but a clear, even shade of red in color and of equal merit with its parent as a forcing and garden rose.

Little Sunshine. Seedling from *Rosa multiflora nana* × Soleil d'Or. Color, creamy yellow, varying to deep golden yellow, occasionally flecked or splashed with crimson. Double flowers 1½ to 2 inches in diameter, carried in large panicles throughout the season. Habit dwarf, spreading and vigorous, similar to *R. multiflora nana*. Very hardy and valuable for garden planting, but of special value for pot culture.

Rules for Registration of New Roses

Any member of The American Rose Society who is the originator of a new rose may register the variety with The American Rose Society without charge for registration. The name of the rose must be given (a number is not sufficient) together with a full description and pedigree of such rose, and this registration shall be considered by The American Rose Society's Executive Committee. It shall then be published in one or more of the trade papers. If no objection to such registration is filed with the Secretary of the Society within three weeks after such publication, the registration shall become permanent. In the event of objection to registration the decision will rest with the Executive Committee. No description of any variety shall be published by The American Rose Society without the sanction of the Executive Committee. Any person not a member of The American Rose Society may register a new rose upon payment of \$3 for each variety so registered.

Adopted at Executive Meeting of November 10, 1913, held in New York City.

Local Societies Affiliated with the American Rose Society

Affiliated organizations pay at the rate of 25 cents per member each year, receive the publications of the Society, and are each supplied with one silver and two bronze medals to be awarded as special American Rose Society prizes at their annual exhibitions.

SYRACUSE ROSE SOCIETY, with 266 members. Rev. E. M. Mills, D.D., President, 823 Summer Ave., Syracuse, N. Y. Dr. Mills is Honorary Vice-President of the American Rose Society, and a member of the Cornell Test-Garden Committee.

THE GARDEN ASSOCIATION of Newport, R. I., with 100 members. Dr. Roderick Terry, President, Newport, R. I.

NEWPORT GARDEN CLUB, with 50 members. Mrs. C. F. Hoffman, President, Newport, R. I.

BROOKLANDS ROSE SOCIETY, of Brooklands, D. C., with 39 members. Charles F. Tansil, President, 1260 Kearney St., Brookland, D. C.

COUNTRY CLUB, Joplin, Mo., with 72 members. Burt W. Lyon, President, Joplin, Mo.

LANSDOWNE NATURAL HISTORY CLUB, of Lansdowne, Pa., with 52 members. Benjamin H. Shoemaker 3rd, Treasurer, Lansdowne, Pa.

Regulations and Scale of Points for Judging Blooms and Plants

The official scale of points for judging outdoor roses is as follows:

Floriferousness	20
Vigor	20
Color	15
Size	15
Form	10
Substance	10
Fragrance	10
	100

A variety shall be considered undisseminated which cannot be exhibited other than by the introducer.

All roses shall be disqualified where exhibited with more than two growths (one pinch), *except* in classes calling for displays and for 100 or more blooms in one vase, on which two pinches are allowed.

All exhibits of cut-flowers will be judged by points in accordance with the following official scale:

	Competitive classes	Novelties for cer- tificates, etc.
Size	15	10
Color	20	20
Stem	20	15
Form	15	15
Substance	15	10
Foliage	15	15
Fragrance (for novelties only)		5
Distinctiveness		10
	100	100

RULES FOR JUDGING GROUPS OF ROSE PLANTS

Size of group or collection	20
Distinctiveness	15
Cultural perfection	20
Number of varieties	20
Arrangement and effect	25
	100

SINGLE SPECIMEN ROSE PLANTS

Size of plants	20
Cultural perfection	25
Floriferousness	20
Foliage	15
Quality of bloom	10
Color of bloom	10
	100

Committees Governing Rose Test-Gardens

Governing Committee.—Alex. Cummings, Jr., Cromwell, Conn., Chairman; Thomas N. Cook, Watertown, Mass., and Wallace R. Pierson, Cromwell, Conn.

Washington Test-Garden.—Robert Pyle, West Grove, Pa., Chairman; Admiral Aaron Ward, Roslyn, N. Y., and Wm. F. Gude, Washington, D. C.

Cornell Test-Garden.—A. C. Beal, Ithaca, N. Y., Chairman; John Watson, Newark, N. Y., and Rev. Dr. E. M. Mills, Syracuse, N. Y.

Hartford Test-Garden.—John Huss, Hartford, Conn., Chairman; Wallace R. Pierson, Cromwell, Conn., and Alex Cummings, Jr., Cromwell, Conn.

Minneapolis Test-Garden.—Theo. Wirth, Superintendent of Parks, Minneapolis, Minn., and Paul J. Olson, St. Paul, Minn.

American Rose Society Medals and Certificates for Novelties

A Gold Medal is offered for the best new rose not yet disseminated, whether of domestic or foreign origin. Exhibits are to be judged upon the official scale of the Society, and no Gold Medal is to be awarded to any rose scoring less than 95 points.

A Silver Medal is offered at the same time, and under the same conditions, for a novelty scoring not less than 85 points.

A Certificate of Merit is to be awarded to all novelties scoring 80 points.

It is further ordered that the complete scores of all the entries in the competition be filed with the secretary of The American Rose Society before the award of any medal is confirmed. No duplicate medal will be awarded. It is understood that though the award of the Gold or Silver Medal or Certificate may be made to the same variety from one exhibitor, exhibited in different centers, only one medal will be delivered to the exhibitor.

The Executive Committee of The American Rose Society reserves to itself the right of selection of the judges who shall pass upon the exhibits in the competition for these medals.

Rose Shows of 1915, with Awards of Medals and Prizes

The American Rose Society participated in three important rose exhibitions during 1915, at which there were in each case notably large numbers of visitors. The Society awarded directly nine Silver Medals,

in addition to a considerable sum in cash prizes, principally contributed by members and friends desirous of aiding in the promotion of rose-growing. The list of these contributors follows.

SPECIAL PRIZES FOR THE BOSTON ROSE SHOW

Budlong Rose Company, Auburn, R. I.	\$25 00
Braham-Dow & Co., Boston, Mass.	10 00
George Burton, Chestnut Hill, Philadelphia, Pa.	25 00
Thomas N. Cook, Watertown, Mass.	25 00
Gardeners' and Florists' Club of Boston	15 00
Gude Brothers Company, Washington, D. C.	10 00
E. G. Hill & Co., Richmond, Ind.	25 00
A. H. Hews & Co., Inc., Cambridge, Mass.	20 00
Montgomery Company, Hadley, Mass.	25 00
Michell Seed House, Philadelphia, Pa.	Gold Medal
F. R. Pierson Company, Tarrytown, N. Y.	25 00
S. S. Pennock-Meehan Company, Philadelphia, Pa.	25 00
E. Allan Peirce, Waltham, Mass.	10 00
A. N. Pierson, Inc., Cromwell, Conn.	25 00
Poehlmann Bros. Co., Morton Grove, Ill.	25 00
Thomas N. Roland, Nahant, Mass.	25 00
S. J. Reuter & Son, Inc., Westerly, R. I.	25 00
Toronto Horticultural Society.	One Silver and two Bronze Medals
Waban Rose Conservatories, Natick, Mass.	25 00

SPECIAL PRIZES FOR THE CLEVELAND SHOW

W. Atlee Burpee & Co., Philadelphia, Pa.	\$10 00
Cleveland Cut-Flower Company, Cleveland, Ohio.	25 00
Mrs. L. E. Holden, Cleveland, Ohio.	50 00
Benjamin Hammond, Beacon, N. Y.	10 00
Lamborn Floral Company, Alliance, Ohio	Silver Cup
Wm. G. Mather, Cleveland, Ohio.	150 00
A. N. Pierson, Inc., Cromwell, Conn, 50 Hadley Roses	25 00
Mrs. U. P. Palmer, Cleveland, Ohio.	32 00
C. B. Raymond, Cleveland, Ohio.	32 00
Storrs & Harrison Co., Painesville, Ohio.	15 00
Mrs. W. B. Sanders, Cleveland, Ohio	25 00
Robert Scott & Son, Sharon Hill, Pa.	25 00
W. S. Tyler, Cleveland, Ohio	25 00
Mr. and Mrs. Lyman H. Treadway, Cleveland, Ohio	25 00
Vaughan's Seed Store, Chicago, Ill.	Silver Medal
Mrs. J. H. Wade, Cleveland, Ohio	50 00

MEDALS TO AFFILIATED SOCIETIES

To the Syracuse Rose Society were supplied medals as follows: One Silver Medal to James M. Gilbert for the best exhibit of roses; one Bronze Medal to Hamlet Worker for amateur prize exhibit.

The Garden Association of Newport, R. I., awarded one Silver Medal to William Gray for special merit shown in the cultivation of Hybrid Teas; a Bronze Medal to Andrew Ramsey for basket of Mrs. Aaron Ward roses; a Bronze Medal to Hugh Williams for exhibit of Hybrid Perpetual roses.

The Country Club of Joplin, Mo., received one Silver and two Bronze Medals, to be awarded.

The Lansdowne Natural History Club, Lansdowne, Pa., received one Silver and two Bronze Medals, to be awarded.

AWARDS AT THE ANNUAL EXHIBITION AT BOSTON, MARCH 18-21, IN COÖPERATION WITH THE MASSACHUSETTS HORTICULTURAL SOCIETY

While the Boston Show was not very large, the quality of flowers and plants was very high.

American Rose Society's Silver Medal was awarded for specimen rambler La Favorita, to M. H. Walsh, Woods Hole, Mass.

CLASS

- 1.—Fifty Hadleys. First prize, \$25, offered by The Montgomery Company, Hadley, Mass.; awarded to Waban Rose Conservatories.
- 2.—Prince E. C. d'Arenberg. First prize, \$25, offered by S. J. Reuter & Son; awarded to A. N. Pierson, Inc.
- 4.—Mrs. Chas. Russell. First prize, \$25, offered by Waban Rose Conservatories; awarded to Waban Rose Conservatories.
- 5.—Killarney Queen. First prize, \$25, offered by Budlong Rose Company; awarded to A. N. Pierson, Inc.
- 7.—Sunburst. First prize, \$25, offered by Poehlmann Bros. Co.; awarded to S. J. Reuter & Son.
- 10.—Mrs. Geo. Shawyer. Prizes offered by A. H. Hews Company, North Cambridge, Mass. First prize, \$20, awarded to A. N. Pierson, Inc.; second prize, \$10, awarded to S. J. Reuter & Son.
- 12.—Twenty-five Mixed Roses. First prize, \$15, offered by The Gardeners' and Florists' Club; awarded to William C. Rush, Brookline, Mass.
- 13.—Twenty-five blooms by grower for less than 75,000 square feet of glass. First prize, \$15, offered by George Burton; awarded to Thomas Roland.
- 14.—Twenty-five Killarney Brilliant. The Michell Seed House Gold Medal, awarded to Jos. Heacock Company.
- 16.—Basket of roses arranged for effect. The judges did not find either entry worthy of the prize offered, therefore recommended a prize of \$7.50 as first prize to be awarded to Penn, the florist.

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CLASS

- 18.—Basket of roses, Mrs. Cecile Brunner, arranged for effect. Prize, \$10, offered by E. Allan Peirce; awarded to Henry R. Comley.
- 19.—Sweepstakes—the most meritorious exhibit of plants or flowers. Medals offered by Toronto Horticultural Society; Silver Medal awarded to M. H. Walsh; Bronze Medal awarded to Thomas Roland.
- 20.—Mantel Decoration. Medals offered by Massachusetts Horticultural Society; Silver Medal awarded to Penn, the Florist; Bronze Medal awarded to Sidney Hoffman.
- 22.—Fifty Killarney, or any pink sport. First prize, \$20, awarded to Joseph Heacock Company; second prize, \$10, awarded to Waban Rose Conservatories.
- 23.—Fifty White Killarney, or any white sport. First prize, \$20, awarded to A. N. Pierson, Inc.; second prize, \$10, awarded to Joseph Heacock Company.
- 24.—Mrs. Aaron Ward. First prize, \$20, awarded to A. N. Pierson, Inc.; second prize, \$10, awarded to S. J. Reuter & Son. (Second prize offered specially by Braman-Dow & Co., Boston, Mass.)
- 25.—Fifty Mrs. Taft. First prize, \$20, offered by Boston Coöperative Flower Market; awarded to S. J. Reuter & Son.
- 26.—Fifty Radiance. First prize, value \$10, offered by Boston Plate and Window Glass Company; awarded to Joseph Heacock Company.
- 30.—Prizes offered by Braman-Dow & Co.; first prize, \$10, awarded to M. H. Walsh for Minnehaha; second prize, \$5, awarded to M. H. Walsh for Lady Gay.
- 31.—Specimen plant. First prize, \$10, awarded to M. H. Walsh for Hiawatha.
- 32.—Display in pots for effect. First prize, \$100, awarded to M. H. Walsh.
- 33.—Collection of twenty-five plants. First prize, \$25, awarded to W. W. Edgar Company.

AWARDS AT THE CLEVELAND FLOWER SHOW, NOVEMBER 10, 1914

This was a notable and largely attended exhibition, and one which interested rose-growers particularly. The committee of the American Rose Society appointed to supervise it included Messrs. W. G. Bates, L. L. Lamborn, and E. B. George. As judges, there were appointed Messrs. Emil Buettner and John H. Dunlop. Fifteen friends gave special prizes, and the awards follow:

CLASS

- 81.—Twenty-five blooms roses—any one variety not yet in commerce. First prize, American Rose Society Silver Medal, awarded to Waban Rose Conservatories with Mrs. Bayard Thayer.
- 82.—Prettiest vase or exhibit of roses in show. Prize of \$50 and a first-class Certificate of Merit awarded to John H. Dunlop, Richmond Hill, Toronto.

CLASS

- 84.—Best fifty blooms Killarney Brilliant. First prize, \$25, offered by Robert Scott & Son; awarded to A. N. Pierson, Inc.
- 85.—Fifty blooms Ophelia. First prize, Silver Cup, offered by Lamborn Floral Company; awarded to J. M. Gasser Company.
- 86.—Vase twenty-five stems (single bloom or cluster as preferred) rose, as Ward, Brunner, etc. First prize, \$25, offered by Cleveland Cut-Flower Company; awarded to F. R. Pierson Company.
- 87.—Twelve blooms, one variety, introduction 1914-1915. First prize, \$10, offered by W. Atlee Burpee & Co.; awarded to E. G. Hill Co.
- 87a.—Vase twenty-five roses. First prize, \$15, offered by Storrs & Harrison Co.; awarded to F. R. Pierson Company, Tarrytown, N. Y.
- 88.—One vase roses, three varieties, fifty blooms each. Prizes offered by Wm. G. Mather; first prize, \$75, awarded to F. R. Pierson Company; second prize, \$50, awarded to A. N. Pierson, Inc.; third prize, \$25, awarded to J. M. Gasser Company.
- 89.—Vase fifty blooms American Beauty. Prizes offered by Mrs. L. E. Holden; first prize, \$30, awarded to Lamborn Floral Company, Alliance, Ohio; second prize, \$20, awarded to F. R. and P. M. Pierson, Scarborough, N. Y.
- 90.—Vase fifty blooms Mrs. Chas. Russell. Prizes offered by Mrs. J. H. Wade; first prize, \$30, awarded to Holton & Hunkel, Milwaukee, Wis.; second prize, \$20, awarded to Rolf Zetlitz, Lima, Ohio.
- 91.—Vase fifty blooms Hoosier Beauty. Prizes offered by Mr. W. S. Tyler; first prize, \$15, awarded to A. N. Pierson, Inc., Cromwell, Conn.; second prize, \$10, awarded to E. G. Hill Company.
- 92.—Vase fifty blooms Ophelia. Prizes offered by Mrs. J. P. Palmer; first prize, \$15, awarded to J. M. Gasser Company, Cleveland, Ohio; second prize, \$10, awarded to F. R. Pierson Company, Tarrytown, N. Y.; third prize, \$7, awarded to E. G. Hill Co.
- 94.—Vase fifty blooms Francis Scott Key. Prizes offered by Mrs. Wm. B. Sanders; first prize, \$15, awarded to S. J. Reuter & Son, Westerly, R. I.; second prize, \$10, awarded to A. N. Pierson, Inc., Cromwell, Conn.
- 95.—Vase fifty blooms Aaron Ward. Prizes offered by C. B. Raymond; first prize, \$15, awarded to J. M. Gasser Company, Cleveland, Ohio; second prize, \$10, awarded to S. J. Reuter & Son, Westerly, R. I.; third prize, \$7, awarded to F. R. Pierson Company.
- 96.—Vase fifty blooms Sunburst. Prizes offered by Mr. and Mrs. Lyman H. Treadway; first prize, \$15, awarded to Lamborn Floral Company; second prize, \$10, awarded to F. R. Pierson Company.
- 98.—Vase fifty blooms Pink Killarney; first prize, \$15, awarded to J. M. Gasser Company, Cleveland, Ohio; second prize, \$10, awarded to Rolf Zetlitz, Lima, Ohio.
- 99.—Vase fifty blooms White Killarney. First prize, \$15, awarded to J. M. Gasser Company; second prize, \$10, awarded to A. N. Pierson, Inc.; third prize, \$7, awarded to Rolf Zetlitz, Lima, Ohio.

CLASS

- 100.—Vase fifty blooms My Maryland. First prize, \$10, awarded to J. M. Gasser Company, Cleveland, Ohio.
- 101.—Vase fifty blooms roses—any other variety. First prize, \$15, awarded to The Florex Gardens, North Wales, Pa.; second prize, \$10, awarded to A. N. Pierson Inc., Cromwell, Conn.; third prize, \$7, awarded to F. R. Pierson Company, Tarrytown, N. Y.
- SWEEPSTAKES.—Silver Cup, awarded to J. M. Gasser Company.
- 103.—Vase twenty-five blooms American Beauty. First prize, \$15, awarded to Lamborn Floral Company, Alliance, Ohio.
- 104.—Vase twenty-five blooms Mrs. Chas. Russell. First prize, \$12, Holton & Hunkel, Milwaukee, Wis.; second prize, \$8, Lamborn Floral Company, Alliance, Ohio.
- 105.—Vase twenty-five blooms Hoosier Beauty. First prize, \$6, awarded to Chas. H. Totty, Madison, N. J.; second prize, \$5, awarded to Lamborn Floral Company, Alliance, Ohio; third prize, \$4, awarded to A. N. Pierson, Inc., Cromwell, Conn.
- 106.—Vase twenty-five blooms Ophelia. First prize, \$6, awarded to Rolf Zetlitz, Lima, Ohio; second prize, \$5, awarded to F. R. Pierson Company, Tarrytown, N. Y.; third prize, \$4, awarded to E. G. Hill Company, Richmond, Ind.
- 108.—Vase twenty-five blooms, Francis Scott Key. First prize, \$6, awarded to Chas. H. Totty, Madison, N. J.; second prize, \$5, awarded to F. R. Pierson Company, Tarrytown, N. Y.; third prize, \$4, awarded to A. N. Pierson, Inc., Cromwell, Conn.
- 109.—Vase twenty-five blooms Aaron Ward. First prize, \$6, awarded to J. N. Gasser Company, Cleveland, Ohio; second prize, \$5, awarded to F. R. Pierson Company, Tarrytown, N. Y.; third prize, \$4, awarded to A. N. Pierson, Inc., Cromwell, Conn.
- 110.—Vase twenty-five blooms Sunburst. First prize, \$6, awarded to Anna Dean Farm, Barberton, Ohio; second prize, \$5, awarded to S. J. Reuter & Son, Westerly, R. I.; third prize, \$4, awarded to F. R. Pierson Company, Tarrytown, N. Y.
- 111.—Vase twenty-five blooms Richmond. First prize, \$6, awarded to Rolf Zetlitz, Lima, Ohio; second prize, \$5, awarded to United States Cut-Flower Company, Elmira, N. Y.; third prize, \$4, awarded to F. R. Pierson Company, Tarrytown, N. Y.
- 112.—Vase twenty-five blooms Pink Killarney. First prize, \$6, awarded to J. M. Gasser Company, Cleveland, Ohio; second prize, \$5, awarded to Cleveland Cut-Flower Company, Newton Falls, Ohio; third prize, \$4, awarded to Lamborn Floral Company.
- 113.—Vase twenty-five blooms White Killarney. First prize, \$6, awarded to J. M. Gasser Company, Cleveland, Ohio; second prize, \$5, awarded to A. N. Pierson, Inc., Cromwell, Conn.; third prize, \$4, awarded to Rolf Zetlitz, Lima, Ohio.

CLASS

- 114.—Vase twenty-five blooms—any other variety. First prize, \$6, awarded to Cleveland Cut-Flower Company, Newton Falls, Ohio; second prize, \$5, awarded to J. M. Gasser Company, Cleveland, Ohio; third prize, \$4, awarded to Lamborn Floral Company, Alliance, Ohio.
- 115.—Sweepstakes, Silver Cup, awarded to Charles H. Totty.
- 116.—Best vase arrangement—100 yellow roses. First prize, \$25, awarded to J. M. Gasser Company, Cleveland, Ohio; second prize, \$15, awarded to A. N. Pierson, Inc., Cromwell, Conn.
- 117.—Vase 100 dark red roses, not lighter than Richmond. First prize, \$50, awarded to A. N. Pierson, Inc., Cromwell, Conn.; second prize, \$25, awarded to E. G. Hill Company, Richmond, Ind.; third prize, \$15, awarded to J. M. Gasser Company.
- 269.—Vase twelve roses, red, one variety. First prize, \$4, awarded to H. S. Firestone, Akron, Ohio.
- 270.—Vase twelve roses, white, one variety. First prize, \$4, awarded to Mrs. L. E. Holden, Cleveland, Ohio.
- 271.—Vase twelve roses, pink, one variety. First prize, \$4, awarded to Mrs. Price McKinney, Wickliffe, Ohio; second prize, \$2, awarded to Mrs. L. E. Holden, Cleveland, Ohio.
- 272.—Vase twelve roses, any other color, one variety. First prize, \$4, awarded to H. S. Firestone, Akron, Ohio.
Prize of \$10 offered by Benjamin Hammond decided by ladies' vote on Thursday evening for prettiest vase of roses; awarded to J. M. Gasser Company, Cleveland, Ohio.
- 273.—Sweepstakes, Classes 269–272, inclusive. No. 2, in 272—Firestone Garden, \$5 Medal. Offered by Vaughan's Seed Store.
- 274.—Twenty-five roses, any variety. First prize awarded to L. E. Holden, Cleveland, Ohio.

AT THE HARTFORD TEST-GARDENS, JUNE 25

The Hartford Test-Garden Committee, Messrs. John Huss, W. R. Pierson and Alexander Cummings, Jr., reported awards as follows:

Silver Medal to Conard & Jones Co., West Grove, Pa., for American Pillar (*Rosa multiflora scandens*), which scored 85 points.

Silver Medal to A. N. Pierson, Inc., Cromwell, Conn., for Killarney Queen (H. T.), which scored 85 points.

Silver Medals to Hoopes, Bro. & Thomas Co., West Chester, Pa., for Purity (H. W.), which scored 87 points, and also for Climbing American Beauty (H. W.), which scored 87 points.

Silver Medal to Hugh Dickson, Ltd., Belfast, Ireland, for Lady Pirrie (H. T.), which scored 85 points.

Silver Medal to Edward Kress, Baltimore, Md., for Defiance (H. T.), which scored 85 points.

The Seventeenth Annual Meeting of The American Rose Society

IN accordance with action taken at the Annual Meeting in Boston, the Seventeenth Meeting will convene, in connection with the great National Flower Show to occur in Convention Hall at Broad Street and Allegheny Avenue, in Philadelphia, from March 25 to April 2, 1916.

The Pennsylvania Horticultural Society is coöperating with The American Rose Society for a rose exhibition to be held in connection with this great Flower Show, and various friends of The American Rose Society have made liberal contributions for special prizes to be awarded. A list of those contributing up to date, follows this announcement.

The rose-garden feature which was so much admired at the last National Flower Show in New York will again be an essential part of the great exhibition in Philadelphia, and it has been arranged to offer \$500 as the first prize, \$300 as the second prize and \$200 as the third prize.

Some \$20,000 in all will be offered for prize competition at this National Flower Show, of which, as above noted, The American Rose Society supervises completely the rose section, under a more liberal schedule than ever before. The attention of friends of The American Rose Society and of readers of this first Rose Annual is therefore called to the National Flower Show.

SPECIAL ROSE PRIZES, PHILADELPHIA FLOWER SHOW, MARCH 25 TO APRIL 2, 1916

Special Prizes for "Rose-Garden" Display: First prize, \$500, second prize, \$300; third prize, \$200.

Advance Company, Richmond, Ind. Materials valued at	\$25 00
Hon. Phillip Brietmyer, Detroit, Mich.	200 00
Emil Buettner, Park Ridge, Ill.	25 00
H. G. Berning, 1402 Pine Street, St. Louis, Mo.	25 00
George Burton, Chestnut Hill, Philadelphia, Pa.	25 00
W. Atlee Burpee & Co., Philadelphia, Pa.	Silver cup
Edward Campbell, Ardmore, Pa.	10 00
John Cook, Baltimore, Md.	5 00
Conard & Jones Co., West Grove, Pa., for private growers	25 00
Henry A. Dreer, Inc., Philadelphia, Pa., for private growers	75 00
John H. Dunlop, Richmond Hill, Ont.	25 00
Eugene Dailedouze, Flatbush, Brooklyn, N. Y.	25 00
August Doemling, Lansdowne, Pa.	25 00
Dingee & Conard Co., West Grove, Pa.	25 00
William H. Elliott, Brighton, Mass.	25 00
Adolph Farenwald, Roslyn, Pa.	25 00

Malcolm Franklin, 1438 South Penn Square, Philadelphia, Pa. . .	\$25 00
Florex Gardens, North Wales, Pa., for best vase of 100 blooms of Mrs. George Shawyer roses	25 00
Gude Brothers, Washington, D. C.	25 00
George B. Hart, Rochester, N. Y.	25 00
Hess & Swoboda, Omaha, for vase 25 Ophelia or Russell roses . .	10 00
Benjamin Hammond, Beacon, N. Y., for prettiest vase of roses to be decided by vote of the ladies	10 00
Joseph Heacock Company, Wyncote, Pa.	50 00
A. H. Hews & Co., Cambridge, Mass.	10 00
E. G. Hill Company, Richmond, Ind., for best 50 Ophelia roses . .	25 00
Jackson & Perkins Co., Newark, N. Y.	48 00
The Joy Floral Company, Nashville, Tenn.	
Kroeschell Brothers Company, Chicago	\$50 Gold Medal
Lord & Burnham Co., 42nd Street Building, New York City . . .	25 00
Michigan Cut-Flower Company, Detroit, Mich.	25 00
Stephen Mortensen, Southampton, Mass.	25 00
Harry O. May, Summit, N. J.	25 00
Martin & Forbes Co., Portland, Ore.	25 00
Michell's Seed House, Philadelphia, Pa.:	
For best vase 25 cut blooms of American Beauty roses .	Gold Medal
For best vase 25 cut blooms of Mrs. Charles Russell roses .	Gold Medal
For best vase 25 cut blooms of red roses	Gold Medal
Waban Rose Conservatories, for 50 Mrs. Charles Russell roses . .	25 00
Leo Niessen, Philadelphia, Pa., for 50 blooms of any new rose not in commerce	25 00
Pittsburgh Cut-Flower Company, Pittsburgh, Pa.	25 00
A. N. Pierson, Inc., Cromwell, Conn.	75 00
Pulverized Manure Company, Union Stock Yards, Chicago	25 00
S. S. Pennock-Meehan Company, Philadelphia, Pa.	30 00
S. J. Reuter & Son, Westerly, R. I.	25 00
W. L. Rock, Kansas City, Mo.	10 00
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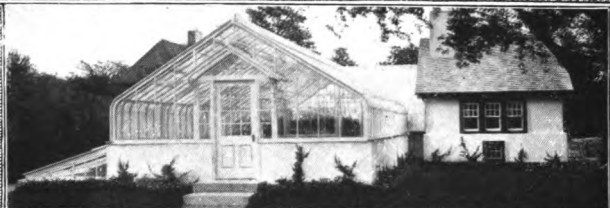
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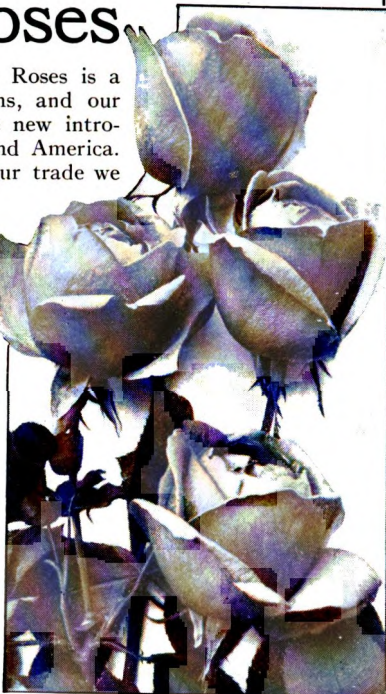
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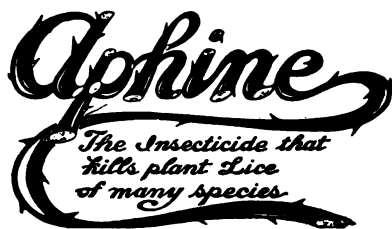


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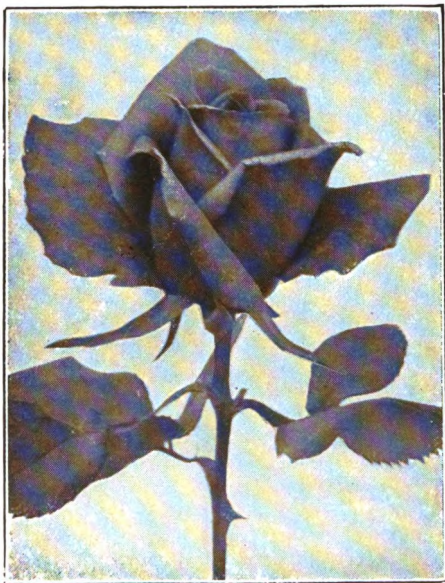
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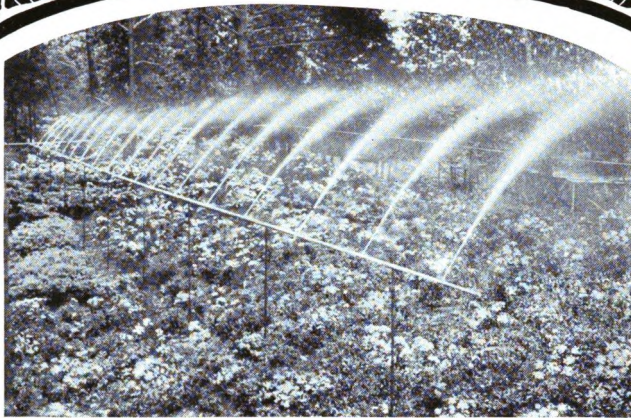
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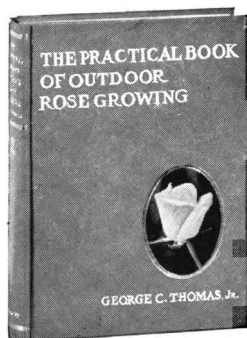
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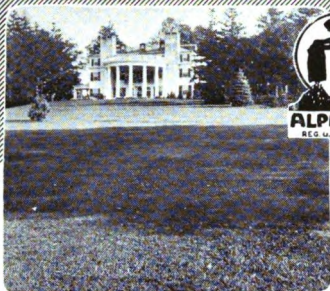
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It is liberally inoculated with Alphano Inoculant, filling it with teeming billions of all the nitrogen-gathering and fixing bacteria for the legumes, such as Alfalfa, Clovers, Peas, Beans and the like.

Alphano is cheap to buy, easy to use, gives quick results first season, and continues its benefits next.

It is sweet, dry, and finely granulated. Don't confuse it with the unprepared, often sour, water-logged humus sold under various names.



\$12 a ton in Bags. \$10 a ton in Bags by the Carload
\$8 a ton in bulk by the Carload. F. O. B. Alphano, N. J.

Alphano Humus Co

Established 1905

17-M Battery Place, NEW YORK CITY

